REVISION No. - . CHANGE NO. .

ATTACHMENT J.1

MARINE CRANE SYSTEM

FOR 270 WMEC CUTTERS

P-583 0475

ORGINATED BY: ELC - 025 Steve Sharpe DATE (08/14/06).

Engineering Logistics Center, Equipment Management Division

INTERNAL REVIEWER ELC – 025 Clyde Martin DATE

SOWRB APPROVAL . DATE .

1.0 SCOPE

1.1 GENERAL

This specification sets forth the minimum requirements for purchase of Marine Crane equipment for the US Coast Guard to install on the 270' Medium Endurance Cutter (WMEC) class. The Coast Guard will be replacing the existing Marine Cranes on each of these cutters with a new crane to launch and retrieve from the water a rigid hull inflatable boat (RHIB) 22 foot in length, 9 foot beam and 5000 pounds weight fully loaded. The required Safe Working Load (SWL) of at least 5000 pounds is the designated lifting weight of the largest intended boat, outfit, and minimum operating crew.

The crane shall be located the same position as the current crane and the boat shall be in approximately the same location as currently but will be rotated to be placed bow forward. The crane's performance parameters shall be based upon operating within the constraints of those locations. The crane shall have a configuration which limits load pendulation by keeping the boom tip as close as possible to the boat during lifting and slewing operations (level luffing), such as folding, extension, or knuckle boom configurations or a combination thereof. The installation for this is unique in that all parts of the crane in the stowed position or when suspending the boat at the mission loading position at deck level alongside must fall below the flight path for the helicopter deck just forward of the crane position. The RHIB identified above is larger than is currently installed. It is highly recommended that the contractor perform a shipcheck of both A and B class vessels.

In general the contractor shall be responsible for supplying:

- all related hardware and machinery up to the point that the supplied equipment are welded/bolted to the ships structure,. This includes the control station pedestal, electric control panel, and HPU.
- design drawings, information, and interface requirements for installation of the crane, and identification of any currently installed equipment needed to be moved for the installation,
- logistics information and materials, and
- warranty, technical and training services.

For the purpose of this specification the terms "davit" and "marine crane" may be used interchangeably as the service for which the equipment is to be provided may, on other vessels, be considered to be a davit.

1.2 INITIAL INSTALLATION

The Coast Guard intends to install the first unit for evaluation prior to placing any optional orders. The contractor will not be responsible for installing the equipment but shall be responsible for commissioning, training, and technical assistance as detailed later herein.

2.0 APPLICABLE DOCUMENTS

2.1 ORDER OF PRECEDENCE

The design and manufacture of the marine crane shall comply with all the government requirements in section 2.3 and shall comply with the requirements of the documents in section 2.4 where called out in the specification. In the event of a conflict between the text of this specification and the references cited herein, this specification shall take precedence. The Contractor is required to notify the Contracting Officer in writing for a resolution of any ambiguity or conflict found in these specifications.

2.2 DOCUMENT AVAILABILITY

To obtain the referenced documents see section 6.1. Unless otherwise indicated, copies of Department of Defense documents are available as stated in the solicitation/contract clauses stating availability of specifications and standards listed in the GSA Index of Federal Specifications, Standards and Commercial Item Descriptions and the DOD Index of Specifications and Standards (DODISS).

2.3 GOVERNMENT DOCUMENTS

The following documents form a part of this specification to the extent specified herein.

2.3.1 Coast Guard Documents

COMDINST M9085.1B, Naval Engineering Computer Aided Design Standards, 10/18/04

COMDTINST M10360.3C, Coatings and Color Manual, 2005

ELC-D-000-0100 G, Bar Coding for USCG ELC Material, 2/06.

ELC-D-083-0351, Data for Provisioning, 1/00.

ELC D-084-0481, Equipment Unit Preservation, Packaging and Marking Standard Requirements for USCG ELC Auxiliary Machinery Branch, 3/06

ELC D-085-0482, Drawings for USCG ELC Auxiliary Machinery Branch, 3/06

ELC D-086-0483, Technical Publications for USCG ELC Auxiliary Machinery Branch, 3/06

ELC D-086-0484, Preparation of Maintenance Procedure Cards for USCG ELC Auxiliary Machinery Branch, 3/06

FED-STD-595B Colors Used In Government Procurement, 1/94

USCG Drawing 270 WMEC 901-WMEC_801_20, Rev E, Booklet of Plans, 9/83

USCG Drawing 270 WMEC 905-WMEC_801-005_, Rev E, General Arrangement, Main Deck, 1/82

USCG Drawing 270 WMEC 905-WMEC_801-006_, Rev D, General Arrangement, First Platform, 12/81

USCG Drawing 270 WMEC 905-WMEC_801-009_, Rev F, Outboard Profile, 12/81

USCG Drawing 855-583-001, Rev. -, SPD Installation Physical Constraints

USCG Drawing 855-583-002, Rev. -, Cutter Boat Large Hoist Rigging (this is a conceptual drawing of a boat currently being procured, it should be considered to be correct in regards to length, beam, sling dimensions and general configuration for the purposes of this contract).

USCG Drawing FL 8201-093, Single Point Davit Standard Hook Assemblies, Davit Rating 4000 Lbs. & Above, 1/4/00

USCG Drawing FL 8201-103 3 Ton Modified Swivel, 1/2 Inch Wire X Apr-206 CBH

USCG ELC Maintenance Procedure Card (MPC) Word form “MPC Form.doc”.

2.3.2 Military Specifications

MIL-STD-419D – Cleaning and Protecting Piping, Tubing, and Fittings for Hydraulic Power Transmission Equipment, 7/13/87.

MIL-STD-1310G, Shipboard bonding, grounding and Other Techniques for Electromagnetic Compatibility and Safety, 6/28/96.

MIL-STD-1399C Section 300A, Interface Standard for Shipboard Systems, Electric Power, Alternating Current, 02/02/88.

MIL-STD-1399C Section 301A, Interface Standard For Shipboard Systems Ship Motion And Attitude, 07/21/86

MIL-PRF-17672D, Specification for Hydraulic Fluid, Petroleum, inhibited, Amend. 3, 5/31/95.

MIL-PRF-18458C – Grease, Wire Rope, Type II,. 7/5/02.

MIL-C-24643B – Cables and Cords, Electric, Low Smoke, for Shipboard Use, General Specification for, 8/22/02.

MIL-V-24695 - Valve, Hose Assembly and Adapter, Vent and Test, Hydraulic Service, General Specification for, 12/23/91.

2.3.3 Other Government Documents

Code of Federal Regulations (CFR 46), U.S. Coast Guard, Subchapters F and J

2.4 COMMERCIAL DOCUMENTS

2.4.1 American Gear Manufacturing Association (AGMA)

AGMA 6001-D97 (1997) - Design and Selection of Components for Enclosed Gear Drives.

AGMA 6010-F97 (2003) – Standard for Spur, Helical, Herringbone and Bevel Enclosed Drives

AGMA 6023-A88 (2000), Design Manual for Enclosed Epicyclic Gear Drives

AGMA 9005-E02 (2002), Industrial Gear Lubrication

2.4.2 American Society for Testing and Materials (ASTM)

ASTM F 1166, Standard Practice for Human Engineering Design for Marine Systems, Equipment and Facilities, 2005.

ASTM D-3951 – Standard for Commercial Packaging, 2004

2.4.3 American Petroleum Institute (API)

API-2C Specification for Offshore Pedestal Mounted Cranes, 6th Ed., 2004

API-9A Specification for Wire Rope, 1995

2.4.4 Institute of Electrical and Electronic Engineers (IEEE)

IEEE Standard 45, Recommended Practice and Electrical Installation on Shipboard, 2002

2.4.5 International Maritime Organization (IMO)

IMO International Life Saving Appliance (LSA) Code (2003)

2.4.6 International Standards Organization (ISO)

ISO 4406, Hydraulic Fluid Power-Fluids-Method for Coding the Level of Contamination by Solid Particles, 1999

ISO 7241 / 1 Series B, Quick Disconnect Couplings, 1987

2.4.7 National Electrical Manufacturers Association (NEMA)

NEMA MG1, Motors and Generators, 2003.

NEMA Standard 250– Enclosures for Electrical Equipment, 2003

NEMA Standard ICS-1– Industrial Control and Systems (series), 2003

2.4.8 National Fluid Power Association (NFPA)

NFPA B93.92M / ISO 7181 Hydraulic Fluid Power, Cylinders, 160 bar, 1987

NFPA B93.106M / ISO 8136 Hydraulic Fluid Power - Single Rod Cylinders, 160 Bar, 1994

NFPA B93.107M / ISO 8137 – Hydraulic Fluid Power, Cylinders, 250 bar, 1987

NFPA T-3.9.22 R1 – Fluid Power, Pressure Ratings for Pumps and Motors, 2000

NFPA T-3.10.8.8 R1 – Fluid Power, Filter, Multi-pass Method for Evaluation, 1994

2.4.9 Society of Automotive Engineers (SAE) International,

SAE H1086, Metals and Alloys in the Unified Numbering System, 2004

SAE-J1780, Hydraulic System Diagrams and Associated Tables for Marine Vehicles, 1991

SAE-J1782, Noise Control in Fluid Power System of Marine Vehicles, 2000

SAE-J1942, Hose and Hose Assemblies for Marine Applications, 2002

SAE-J1942-1, Qualified Hoses for Marine Applications, 2002

SAE J2321, Ship Systems and Equipment – General Specification for Filter Elements, 2002

SAE J2333, Ship Systems and Equipment – Filter Selection Parameters, 2004

3.0 GENERAL MINIMUM REQUIREMENTS FOR MARINE CRANES

3.1 GENERAL

3.1.1 Equipment Procurement

The contractor shall provide all labor and material to provide Marine Crane equipment for the US Coast Guard to install on the 270’ Medium Endurance Cutter (WMEC) class. Any materials and components sub-contracted for shall be the responsibility of the contractor. The marine crane system shall be provided as a factory assembled and tested system. The government will install this crane under separate contract.

The following drawings provide guidance into the available location for the boat, the installation location and the existing system as guidance:

USCG Drawing 855-583-001, Rev. -, SPD Installation Physical Constraints

USCG Drawing 855-583-002, Rev. -, Cutter Boat Large Hoist Rigging

USCG Drawing 270 WMEC 901-WMEC_801_20, Rev E, Booklet of Plans

USCG Drawing 270 WMEC 905-WMEC_801_20, Rev E, Booklet of Plans

3.2 ENVIRONMENTAL CONDITIONS

3.2.1 Ship Motions

The crane shall be designed to withstand the following survival accelerations interface data per MilStd 1399 301A while in the stowed position on a 270 ft WMEC cutter given a significant wave height of 37.7 feet and average wind speed of 59.5 knots environmental conditions:

Acceleration Factor	Magnitude	Direction
Ax	1.790g	Parallel to centerplane
Ay	1.420g	Perpendicular to centerplane
Az	2.873g	Perpendicular to baseplane

The contractor shall be responsible to provide with the system any stowage brackets needed for support of the crane in order to meet the above requirements and to include the necessary bracket placement in their recommended installation sketch. The above values are based upon the crane in the stowed position with its center of gravity assumed to be at:

Longitudinal =	Fr 224
Transverse =	14.25 ft Port
Vertical =	28.25 ft

The crane shall be designed to launch and retrieve the cutter-boat at a significant wave height of 10.7 feet and average wind speed of 24.5 knots environmental conditions. The following operational interface acceleration data has been calculated for the extended crane head on a 270 ft WMEC cutter and shall be considered in the design of the crane. Boom tip is kept near the minimum height.

Acceleration Factor	Magnitude	Direction
Ax	0.536g	Parallel to centerplane
Ay	0.346g	Perpendicular to centerplane
Az	1.383g	Perpendicular to baseplane

The above values are based upon the crane at launch position with the boom tip assumed to be at:

Longitudinal =	Fr 236.36
Transverse =	25 ft Port
Vertical =	38.52 ft

The vessel has a nominal roll period of 11 seconds.

3.2.2 Temperature Limits.

The crane shall be designed to launch and retrieve the cutter-boat under temperature operating limits of +10 degrees F to +95 degrees F ambient air temperature plus solar gain. The latter results in an equivalent equipment surface temperature of 140 degrees F for weatherdeck equipment. Systems shall operate in all conditions spanning relative humidity of 100 percent to icing on exposed surfaces. Surfaces subject to ultra violet ray (sunlight) degradation shall be UV protected.

The hydraulic power unit, motor controller, and crane control panel shall be suitable for installation in the steering gear compartment. This compartment is naturally vented, heated, and contains other electro-hydraulic equipment. The compartment temperature reaches 135 degrees F with 100% humidity in the summer, and can reach 40 degrees F in the winter.

3.2.3 List and Trim

The crane shall be designed to perform all functions at Safe Working Load (SWL) against a permanent list of 20 degrees and permanent trim of 10 degrees.

In a stowed condition the crane shall survive the cutter rolling 60 degrees – single amplitude and pitching 15 degrees single amplitude, which may occur simultaneously.

3.3 MARINE CRANE REQUIREMENTS

3.3.1 Certification.

The crane shall be certified to API Specification 2C under the Minimum Purchaser-Defined Requirements sheet, Attachment 4, and as further detailed herein (Should the contractor consider there is any disagreement between that document and this specification they should contact the Contracting Officer for clarification, it is intended to be a restatement of these specifications). It shall have a Safe Working Load (SWL) of 5000 lbs. There are several lifting cases which shall be met, each of which could be a limiting factor in the design of the crane.

Lifting cases which must be met are:

- The longest reach with the boat (approximately 4600 lbs) suspended is expected to be approximately 17 feet when tending directly aft of the crane while the boat is in transition (without personnel) from the cradle to the loading position alongside. This may vary depending on the configuration of the crane (i.e. positioning of a boom lift cylinder which requires more clearance to move the boat past the pedestal).

- The minimum lift radius of the crane shall be at most 15 feet to the pick point of the boat sling when in the cradle. A lesser minimum radius is preferred to as little as 7 foot to enable the boat to launch directly athwartships of the crane post tight to the side of the cutter.
- While lowering the boat the crane shall be able to perform a boom offboard lift to launch or retrieve the boat at the cutter's port side waterline when the cutter is at a starboard list of 20 degrees, at a reach of approximately 11 feet under operational sea state conditions with 10.7 feet significant wave height.
- The crane shall also be able to lift the boat engine (900 lbs.) or outdrive out/off of the boat and to the fantail deck when stowed in the cradle, the distance for this lift may be up to 21 feet depending upon the selected location of the cradle. This lift may be achieved by a manual extension of the crane that can be easily configured by the crew while underway, but this must be included as a part of the offered crane package.

The lengths of these lifts and reaches may vary depending on the configuration of the crane and/or placement of the cradle; the contractor is to verify the required reach of their proposed crane to perform the required functions. The placement of the cradle is variable slightly fore and aft depending on the minimum lift diameter of the crane but shall not be closer than 15" to the suspended net frame or further aft than the centerline of the capstan. See the referenced drawings USCG Drawing 855-583-001 SPD Installation Physical Constraints and USCG Drawing 855-583-002 Cutter Boat Large Hoist Rigging for more details on the required lift and reach parameters.

Personnel movement shall be restricted to boat launch and retrieval between the cutter personnel transfer position at the deck edge and the water. The marine crane system shall not be rated for handling of personnel within the context of API-2C. In lieu of that, the following additional requirements based upon the SOLAS LSA Code shall be met.

- There shall be minimum design factors of 4.5 on the ultimate strength of members.
- There shall be minimum design factors of 6.0 for rigging, wire rope, links and blocks
- Both design factors shall be based on a SWL hoist incorporating sea conditions with 10.7 feet significant wave height.

The Contractor shall prepare calculations to document compliance with API-2C and other equipment performance requirements herein and include same in the Design and Interface Report required by 3.4.1. In the

calculation of structural and mechanical loads and stresses, see 3.2.1 Ship Motions. The calculations shall also document the moments imparted to ship structure by the crane under boat handling conditions at sea.

3.3.2 Crane System Layout and Design

The location of the crane machinery and boat (with projections) shall fit within the confines of the deck area in accordance with the referenced USCG Drawing 855-583-002, SPD Installation Physical Constraints. The crane shall be designed so that it can be removed from the pedestal for overhaul. The existing cradle and cradle location in the drawing may be assumed to be typical but varies between vessels. The hydraulic power unit and controllers shall fit within the deck space and sideshell area in the steering machinery space below the fantail currently occupied by the hydraulic power unit for the existing crane, the location varies between A and B subclasses. No modifications to the ship's structure by the Coast Guard are intended other than removal of the existing crane equipment, strengthening of the existing deck structure to carry any additional weight and physical attachment of the new crane assemblies to the ship's deck. Materials for the structure of the crane shall be identified in accordance with SAE-H1086 nomenclature.

The crane machinery in the stowed and mission loading positions shall not project into the flight path area which starts aft of the aft most projection of the flight deck nets and rises towards the stern at an 8 degree angle, see the view in USCG Drawing 855-583-002, SPD Installation Physical Constraints for specific limitations. The control station shall be installed in the location of the existing control station as shown in the drawing and provide visibility to the boat in the water at the position to be retrieved, boat loading area, and the deck area of the cradle. A tethered or wireless chestpack control is not acceptable.

The loading and launching position for the boat alongside shall be in the vicinity of Frames 220-230.

3.3.3 Markings

The equipment to be delivered under this contract shall be clearly marked at the subassembly level with nameplates. These plates are to be manufactured to best commercial practice, stainless steel, and contain (at a minimum) sub-assembly name, contract number, date of manufacture, contractor assigned crane unit serial number, Safe Working Load, brake test load (designated in paragraph 3.3.13.2) and the dynamic test load (designated in paragraph 3.3.13.2) physically imprinted (vice only using paint or ink). In addition to the above requirements, an additional nameplate containing the Contractor's name and address shall be permanently affixed to the crane boom pedestal.

The plates shall be permanently affixed to their respective sub-assemblies in a position that is clearly visible after the crane is installed.

3.3.4 Hoisting and Lowering.

The boat will be positioned on a government provided cradle in a bow foreward aspect approximately 18-26" above the deck (varies between cutters) and will be lifted by a sling system with a lift ring approximately 9'4" above the boat keel. The crane shall be able to lift the boat from the cradle, level luff to the side of the vessel over the existing 4' lifeline stanchions, lower and stop at a loading position at deck level, hold position against the side of the cutter while being loaded to Safe Working Load at the rail, lower to the water and perform the same in reverse. In luffing and lowering the RHIB to the loading position the configuration of the crane shall result in a short lead from the crane boom to the hook to keep pendulation of the boat to a minimum in these evolutions, a design which requires the lifting point of the crane boom to raise high to bring the lifting point close in to the crane (as on the cradle or at loading position alongside) does not meet this requirement. These performance requirements are demonstrated in the accompanying drawings, 855-583-001, SPD Installation Physical Constraints and USCG Drawing 855-583-002, Cutter Boat Large Hoist Rigging, but it must be understood that the dimensions for required boom reach as shown may vary depending upon the height and configuration of the provided crane.

The crane shall feature a constant tension winch to maintain tension on the fall while attached to the boat afloat alongside. The hoist shall permit infinite speed control from zero to at least 60 feet per minute in both directions at Safe Working Load and rated sea states. Constant tension winches shall have a rated speed of 180 feet per minute. The winch control system shall minimize slack wire induced tension surges and damage to equipment. When the boat is stowed, at the rail, or being lowered into the water the bow of the boat is to be facing foreward.

3.3.5 Control Station

A pedestal mounted control panel shall be provided for installation near frame 214 in the area of the existing control station with the ability of a standing operator to observe the boat deck, full movement of the crane, loading of the boat and the position of the boat in the water. All elements in the station shall be electrical; no hydraulic components shall be included in the control stand. ASTM F 1166, Standard Practice for Human Engineering Design for Marine Systems, Equipment and Facilities, 2005 shall be considered in the design of the operator's console.

The primary crane controls shall be configured per API 2C Figure 9 unless additional controls are required for elements of the provided crane (i.e.

boom extension). The controls shall permit a combination of lifting, slewing and boom articulation without dropping the load or loss of crane control. A remote start-stop shall be provided to energize the hydraulic power unit and an indicator light shall verify power to it. A separate emergency stop switch shall be prominently located and protected from inadvertent operation. There shall be a control for the selection and cancellation of the constant tension mode and indicator light to indicate that the mode is engaged. Digital indicators shall be provided to indicate system pressure. A consolidated alarm with an audible alarm and indicator light shall be provided to indicate loss of power to the HPU or loss of pressure within the system.

The console shall have flight operations compliant lighting provision; console lighting shall be able to be made to not interfere with night vision goggles. This shall include a switch or switches to select console light on, off, white or night vision goggle compliant blue, to adjust brightness of the control station console lighting and a three position selector switch to select Off, Blue, or White floodlights. Any electronic controls beyond the switches, gauges, alarms and lights above shall be installed below decks in a NEMA 12 enclosure, in accordance with NEMA 250.

The enclosure for the control panel for the crane shall be watertight and shall have a hinged, 316 stainless steel weathertight cover, which shall further protect the exposed control console switches, handles and working components from the weather when the console is not in use. All cable penetrations to the control panel shall be run through the deck within the watertight base of the console. The console shall allow for access to all controls for maintenance or replacement. When opened for use, the cover shall hinge out of the way, latch fully open or in a position to shade the panel from direct sunlight, and shall be prevented from accidental closure from seaway motions. When closed the cover shall be secured by a latch.

3.3.6 Hook

The crane system shall be fitted with an “off-load release” type hook system in accordance with the International Life Saving Appliance Code for handling new RHI type boats and USCG Drawing FL 8201-93, View 31-B (Eagle Products KY “CE” 356-CBH hook system is acceptable). The cable shall be fitted with a hook and swivel mechanism with wire rope/lanyard release. The block shall be fitted with handles suitable to grasp the hook with mittened hands in accordance with ASTM F1166. The hook shall have a release lanyard that extends to a point 8 to 12 inches below the level of the actual hook and terminated with a nylon (or equivalent) ball between 2 to 3 inches in diameter and with a thimble and swaged wire clip. The top of the thimble and the wire clip shall be recessed into the nylon ball to minimize points of snag. Provision shall be made for an attachment of additional

lanyards (rope) for tag lines. The block shall be rated for a minimum of the SWL, shall have been pull tested to twice the rated load, and the pull test certificate shall be attached to the hook

3.3.7 Crane System Weights and Centers of Gravity

The total operating crane system weight of all the modules including loose components and fluids shall not exceed 8000 lbs total. Stability is critical on this class of cutters so designs keeping the center of gravity of the system as low as possible, especially the crane unit, and means to reduce the overall weight of the crane system are preferable. Weight saving options which fall outside of the specification may be submitted in addition to a fully compliant system for consideration.

3.3.8 Winch and Rigging

3.3.8.1. Winch -

Winch drum shall have a D:d ratio of 18:1 per API 2C 8.1.2.1. The winch shall stow the working portion of the wire rope in no more than 3 layers of wire on the drum. Winch shall be fitted with a spring set hydraulic drum release system rated for at least 150% of the SWL. Provision shall be made for the change of lubricant with minimal spillage or clean-up.

3.3.8.2. Rotation Bearing -

The rotation bearing shall be bolted to both the mounting flange on the crane column, and to the marine crane flange. The equipment shall be arranged to permit easy access to all bearing bolting for torque validation. The bearing shall be provided with multiple grease fittings to ensure complete lubrication can be accomplished without excessive rotation.

3.3.8.3. Sheaves -

Sheave assemblies shall meet API-2C 7.4. Sheave pin assemblies shall be stainless steel, and shall incorporate stainless steel grease fittings and internal grease distribution paths positioned so that all pins can be easily lubricated by personnel standing on a deck, platform or access ladder. The crane head sheave or crane head shall pivot or flag not less than 30 degrees to the left and right of vertical to the boom tip, to permit the wire rope to trail up to 30 degrees forward or aft of vertical.

3.3.8.4. Swivel -

A modified marine grade 3 ton swivel unit shall be provided. The swivel shall be machined from steel, and shall be zinc plated for corrosion resistance. The swivel shall be fitted with angular contact bearings, and shall be fitted with a pressure lubrication fitting.

The swivel unit end fittings shall interface with the wire rope fitting, and with the marine hook; this may require special machining. The swivel shall be a modified angular contact bearing Jaw and Eye swivel, Crosby Group "AS -3" series or equivalent, machined in accordance with USCG Drawing FL 8201-103, zinc plated alloy steel or series 304 or better stainless steel.

The swivel shall have a marine service rating, with a design factor of safety of 6.0, and shall be pull tested to twice the rating. The pull test certificate shall be attached to the swivel.

3.3.8.5. Wire –

Wire rope shall be 3x37 classification wire with independent wire rope core and meet the requirements of API-2C 7.2 and API-9A. The wire shall be fitted with a closed swaged socket eye similar to Crosby Group S502 series or equal (carbon steel, spherodize annealed, with swaged socket rated at 100% efficiency of the catalog strength of the rope and a means to visually verify swaging prior to physical gauging) in accordance with USCG Drawing FL 8201-93, View 27-B. Sufficient wire rope shall be provided on the winch to fully extend the boom, slew athwartships and luff so that the wire rope is against the hull. The hook shall reach the keel line of the cutter, with at least 3 wraps of wire rope remaining on the drum, plus an additional re-termination allowance of 10 feet. Wire shall be pressure lubricated after assembly with MIL-PRF-18458 wire rope lubricant, with particular attention to lubrication of the wire rope in way of the swaged fitting. To ensure sufficient lubricant in the fitting area, supplementary aerosol type lubricants can to be used in this area only. The wire rope and attached closed swaged socket shall be pull tested to twice the rated breaking strength of the weakest link after assembly, assuming a design factor of safety of at least 6.0, and provided with a certificate of pull test. The certificate shall be attached to the wire rope.

3.3.8.6. Anti-Two-Block -

The crane shall be fitted with an anti-two-block mechanism to prevent the wire rope and end fittings from being drawn closer than 10 inches to the contact point of the head sheave in any working position. The anti-two-block device shall be fail safe, and shall utilize a proximity switch system. When the system is triggered, crane functions which would reduce the effective wire length shall be blocked. Crane functions which would extend the effective wire length shall not be impeded. The system shall self-reset upon removal of the interface. In the Level-Luffing mode, the winch shall automatically pay out sufficient for the

crane to continue operation without interruption from the anti-two-block device.

3.3.9 Pins And Fasteners

All bearing pins shall be of a 316 Grade Stainless Steel, and shall be fitted with stainless steel zirc fittings and grease distribution grooves.

All bolts used for mounting of the crane to the vessel shall be provided with the crane.

All non-load bearing fasteners, bolts, nuts and hardware shall meet minimum requirements of Grade 316 Stainless Steel.

3.3.10 Emergency Operation Upon Loss of Electric Power or Hydraulic Pressure.

Provision shall be made for manual cranking of the primary lift winch. A removable hand crank shall be provided and a bracket shall be installed for stowage of the hand crank when not in use. An extension socket shall be provided so that the manual crank drive may also be powered by a cutter's ½ inch drive pneumatic wrench. The hydraulics shall have a manual release to release the brakes securing the crane from slewing motion and to lower the boat from the slewed position. A portable hand pump shall be provided to power the brake release and the slewing motor in an emergency. The hand pump shall be removable via a quick disconnect fitting for stowage out of the weather. A single means to gravity launch the boat from the cradle to the water surface is not required.

3.3.11 Electrical

Electric motors and associated equipment shall meet the design, performance, application and installation requirements of IEEE-STD-45, 46 CFR, Subchapter J, and National Electric Manufacturer's Association (NEMA) standards MG1 and ICS. Current carrying elements of motors shall not be made of aluminum.

All motors shall be equipped with anti-condensation heaters and factory-sealed pre-lubricated bearings. All motors shall be rated for continuous duty. The motor for the HPU shall have a soft start feature. The motor shall be located below decks and shall be rated for 50 degrees C temperature rise.

The crane system shall be designed to operate on 450vac, 3phase, 60Hertz, ungrounded ship service power. Electrical equipment shall operate on an ungrounded electrical system.

The Cutter's ship service distribution system maintains the system characteristics of Type 1 power as defined in MIL-STD-1399, Section 300A. The Crane system shall operate within the constraints specified by this standard.

Exterior connection boxes and wiring fittings shall be made of brass or bronze. Fasteners such as bolts, nuts and pins shall be 316 Grade stainless steel.

Equipment bonding and grounding shall be provided in accordance with MIL-STD-1310G.

Motor control circuits shall operate on 120 volts or less and power for motor control circuits shall be obtained from control transformers integral to the motor controllers.

Motor control circuits shall be designed so that any grounding in the control or power circuits will not start the motor or by-pass any shutdown provisions.

All power and control cables shall be installed from the bottom of the controllers or junction boxes. Cable penetrations exposed to the weather shall be waterproof per NEMA standards. Electrical cabling exposed to possible damage shall be protected in conduit per IEEE-STD-45, 2002, 25.4 Cable protection.

The crane arm shall have a 200 watt white light and a 200 watt light with blue lens to illuminate the boat and water below for night operations. Lights shall be gimbaled or otherwise made to direct downwards from any crane arm aspect and shall be made to be manually adjustable by the ship's crew. The lights shall be operated from a power switch on the operator's console to select Off, Blue light, or White light.

All controller panels shall be NEMA Standard 250 Type 4X and shall be fitted with stainless steel latching devices.

All indicator lights shall be able to be dimmed. One dimming control located on the operator's console shall be provided to facilitate dimming all indicator lights.

Any electrical equipment located on the weather deck or exposed to severe moisture and icing conditions shall be watertight. Any motors located on deck or exposed to the weather shall be Totally Enclosed Fan Cooled (TEFC). All interconnection cable on the boat crane shall meet MIL-C-24643, including watertight rating.

3.3.12 Hydraulic System Requirements.

The hydraulic system shall support operation of the crane under list and trim conditions in 3.2.3. This shall be proved in factory testing per 3.3.13 and submittal of design calculations. Hydraulic systems shall meet 46 CFR 58.30 Fluid Power and Control Systems, paragraphs 30-1 through 30-50, except as modified herein. Winch(es) and slewing shall be hydraulic powered.

3.3.12.1. HPU -

The Hydraulic Power Unit (HPU) shall be located in the after steering space below the boat deck and shall fit within the space currently occupied by the existing crane's HPU, approximately 3.5 ft by 2.5 ft. The location within the space varies between A and B subclasses. The unit shall be modular in construction and allow for transit through existing doors and hatches. The contractor shall verify ability to transit modules to the installation location during the shipcheck. The HPU shall provide for fully flooded pump suction.

The hydraulic system shall be self-contained and pressure compensated. The system shall have a secondary (reduced) pressure setting for periods of inactivity. No external source of hydraulic fluid under pressure shall be required.

Load sensing signal from the control valves on the crane to the HPU shall be electrical.

Hydraulic system design pressures shall not exceed 3600 psi, the design pressure is defined as the set pressure of the relief valve. The normal operating pressure required to operate the marine crane unit and to perform the Marine Rated Load Operating Test and Marine Brake Test shall not exceed nominal 2900 psi.

3.3.12.2. Pumps –

Hydraulic pumps shall be commercial marine continuous duty type which is of a shock resistant type. They shall have a rated static pressure of at least 1.7 times the system design pressure, and shall have a rated fatigue pressure of at least 1.35 times the system design pressure per NFPA T-3.9.22 R.1. Pump and motor porting shall terminate in bosses cast or machined in the case or cover. Porting shall be straight thread connections and, except for gage ports, shall have O-ring seal, or O-ring seal flange connections. Tapered thread bosses with adapters are not permitted. The hydraulic pump shall be sized for the highest single flow rate crane function (rotate, raise, winch or extend as applicable) at rated speed, or the two highest flow rate crane functions simultaneously at not less than 2/3 of their respective rated speeds, whichever is greater.

3.3.12.3. Pump Control / Modes-

The system shall permit operation of the hydraulic power unit in a standby mode for at least 2 hours without flow. Either a return line cooler, or an installed kidney-loop system on the reservoir shall be provided for hydraulic fluid cooling. The hydraulic pump controls shall be fitted with a load sensing feature or unloading feature to permit the

pump to run at a reduced pressure and generate less heat when crane operation is not required. The hydraulic pump controls shall be fitted with an unloading feature to permit hydraulically unloaded start-up of the electric motor.

3.3.12.4. Fluid -

The fluid shall be compatible with hydraulic fluid designation 2135 in accordance with MIL-PRF-17672D. The Coast Guard desires to achieve multi-year service life of hydraulic fluid. The manufacturer shall not provide a system design which requires instructions to change oil annually.

The hydraulic particulate contamination and water content limit levels shall be ISO 4406, level 17/15/12 and .05% by weight or better. The Contamination Limit level that will permit the equipment to reach the required service life, based on the needs of the most contamination sensitive component shall be clearly identified on the system diagram and in the technical publication.

The Contractor shall flush all piping, hoses and equipment per MIL STD 419D to achieve and maintain the required cleanliness level. When the system is prepared for shipment, all points of hydraulic interface shall be capped or plugged to prevent contamination.

3.3.12.5. Gearing –

Any gear mechanisms included in the system shall meet the requirements of one or more of AGMA 6001-D97 b, AGMA 6010-F97, AGMA 6023-A88, or AGMA 9005-E02 as applicable to the included gearing.

3.3.12.6. Cylinders –

Hydraulic cylinders shall be rated for marine service and cylinder rod corrosion protection shall be stainless steel rods with double chrome plating. Cylinders shall conform to NFPA dimensional standards B93.106M or B93.107M, or their equivalent. Bore and area ratios shall comply with NFPA B93.92M. Wiper and seal systems shall be cartridge types which are field replaceable. Cylinders shall be fitted with cushions to reduce structural impact loading on the cylinder ends. Equipment arrangements shall stow with as minimal rod exposed as reasonably practical.

3.3.12.7. Materials and Piping –

Hydraulic piping, tubing, and fittings shall be seamless stainless steel with a design factor of at least 4.0. Piping connections shall be welded, to the extent practical. Equipment interfaces and take-down joints for

maintenance purposes shall be fitted with flange type connections with O-ring seal or straight thread type connections with O-ring seal. National Pipe Connections or British Standard Pipe (BSPP) tapered threaded connections shall not be used. Piping shall be supported by isolation hangers. Cadmium shall not be used where it will be in contact with hydraulic oil.

3.3.12.8. Hoses -

Hydraulic hoses shall meet the requirements of SAE J1942 and SAE J1942-1, and should not exceed 30 inches in length except as necessary to support the movement of equipment. Hoses shall have a service life of at least 8 years. Hoses exposed to the weather shall be fitted with a weatherproof cover intended for marine service in direct sunlight resistant to ultraviolet light degradation. Hose fittings shall be stainless steel and shall be permanently installed on the hose. The use of hydraulic hose connections with "O"-ring seal connections is preferred. Hoses shall be field replaceable without unshipping the crane, where necessary bolted access plates shall be provided for access to hose end fittings. Hoses shall be assembled to standardized lengths, to the extent practical. The Contractor shall fully identify all hoses in the Technical Publication, to permit fabrication and assembly of replacement hoses. Each installed hose shall have affixed a weather resistant tag engraved or embossed in ¼" high letters with the manufacturers part number, "S/N _____", "Tested 150% WP" and Test Date [DD/MM/YY], and Replacement Date [QTR "Q"/YY] based upon an 8 year service life from date of installation in the system (the 4th quarter of 2014 would be entered as "4Q14"). The serial number shall be entered on the tag by the personnel on the cutter on which the system in installed.

3.3.12.9. Valves -

All valves shall be accessible for maintenance and repair. Manifold and sub plate type valves are preferred for maintenance purposes. In-line welded valves shall be modular in construction. Locking devices shall be provided for locking adjustable valves at service adjustment and valves that are required to be locked in the open or closed position for normal operation, the use of wire ties or similar devices are not acceptable as locking devices. Manually adjustable valves shall have a calibration marking system to permit repeat setting. The number of valves exposed to the weather shall be kept to a minimum, to the extent practical.

Test, vent and sampling poppet type valves shall be installed on both sides of control valves, regulating valves, and all major components such as pumps, motors and cylinders to provide for diagnostic testing

and analysis of hydraulic systems. The valves shall permit temporary connection of diagnostic equipment with the hydraulic system under pressure, without leakage. The fittings shall primarily be installed in gage ports, where available. The valves shall be stainless steel commercial marine grade poppet valves which are interchangeable with USN standard MIL-V-24695 valves with reverse buttress threads; Hydrotechnik / Schroeder Industries Series 1215 valves or equal meeting the specification. These valves shall be used for validation of set pressures and working pressures during system operation, and for sampling the system for particulate contamination.

3.3.12.10. Gages –

The hydraulic system shall be fitted with shock-resistant type gages sufficient for normal operation of the system. As a minimum, pump discharge pressure shall be indicated locally on the equipment. Gages shall be installed with isolation valves and damping devices.

3.3.12.11. Filters –

Fluid filters shall be provided with a suction strainer in the reservoir, pressure filter(s) in the supply line, and a return line filter in the return to reservoir as a minimum. Filters shall meet SAE J2321 and SAE J1782-00, where appropriate and reasonable. Filter selection shall be selected in accordance with SAE J2333. Dirt capacity shall be determined using NFPA T-3.10.8.8. Filtration requirements and minimum standards shall be established using Beta ratings, and SAE or ISO standard multi-pass test methods. Fluid filters shall be able to be removed from the power pack without spilling or without requiring disassembly of other components. The size, type, flow rating, dirt capacity and Beta rating of all filters shall be identified in the technical publication.

3.3.12.12. Noise control –

Preventive measures shall be taken to control the airborne and structural vibration noise generated by the hydraulic power unit, SAE J-1782 may be used for guidance. The hydraulic pump and electric motor shall be compound isolation mounted from the power unit foundation. The hydraulic pressure line from the HPU shall be fitted with a noise suppression unit.

3.3.12.13. Testing –

The crane shall meet the test requirements of the following section 3.3.13 Testing. Drift tolerances shall be maintained when the boat is stowed for long periods of time at the ship’s side.

3.3.12.14. Reservoirs –

Fluid reservoirs shall be stainless steel to minimize rust and contamination. The service suction and return line ports shall be baffled to encourage circulation of fluid and prevent short-circuiting of fluid. Pump suction arrangements shall prevent pump cavitation and starvation. The reservoir shall have an additional suction port on the very bottom to permit use of a portable filter cart system to remove reservoir sediment. This suction port shall be fitted with a ball type foot valve and a quick-disconnect coupling. Normal manual fill ports shall not be provided; the reservoir shall be fitted with a return line port with quick-disconnect coupling to permit a nominal 10 gpm portable filter cart system to return fluid, or fill the reservoir (this shall be the normal fill connection). An emergency fill port with screwed or bolted cover shall be provided on the top of the reservoir. The port shall meet the design head pressure of the reservoir. All quick disconnect couplings with internal valves shall be stainless steel, and meet the requirements of ISO 7241/1 Series B. The valves shall be nominal 1-inch size. The mating couplings shall be provided loose for use with filter cart hoses. Permanently attached plugs and covers with lanyard shall be provided to maintain cleanliness. The valve assembly on the suction line from the reservoir shall be male. The valve assembly on the reservoir for the return line shall be female.

Fluid reservoirs shall be fitted with valved, desiccant filter type breather vent. Under no-flow conditions, the vent shall prevent the passage of air, and minimize vented contamination. The reservoir shall be sized to hold at least 2 times the full flow rate of the pump, plus an allowance to hold a full drainage of the system but in no case less than 5 gallons. The fluid volume in the reservoir shall be enough so that the hydraulic pump can operate at rated flow for at least 60 seconds without the liquid level going down to the Low Level Alarm condition. Reservoir design pressure and venting shall prevent over-pressurization from fluid surges or fluid being added under pressure by a nominal 10 gpm portable filter unit. The venting system shall be arranged to prevent spillage of oil under crane stowed position wave height survival conditions.

The reservoir shall be fitted with a sealed, magnetic type level indication unit, which shall visually indicate from below the Low Level – Alarm to above the reservoir Full condition. The level indicator shall be visible at acute viewing angles. A sensor for Low Level alarm condition shall be installed on the magnetic level unit. The alarm condition level shall represent the lowest acceptable operating level in any reservoir operating inclination. Label plates with an engraved level indication line shall be installed on the indication unit to visually mark the Full (pump off), Low Operating Level (pump off) and Low Level Alarm (pump on) fluid levels. Operation at the Low Operating Level (pump off) condition shall

not trigger the Low Level – Alarm condition. The reservoir shall be fitted with a bolted-patch type clean-out access. The reservoir shall be fitted with a temperature sensor for sensing reservoir ambient temperature. The sensor shall be replaceable without draining or disassembly of the reservoir. Digital display of reservoir temperature shall be provided on the reservoir or on the HPU controller. Alarm indication of over-temperature condition shall be provided.

The reservoir shall be fitted with a thermostatically adjustable electric heating element, which shall can raise the reservoir temperature from a cold iron temperature of 30 degrees F to a minimum operating temperature for starting within 2 hours. Power shall be provided via the HPU motor controller, and a means to isolate the heater shall be provided. The heater shall not exceed 16 watts per square inch. If the total kw requirement is above 1 kw, then the heater voltage shall be 440 vac

3.3.13 System Test Requirements.

The contractor shall notify the contracting officer (KO) of all tests at least 14 calendar days prior to the event. The Coast Guard reserves the right to witness any or all of these tests. The contractor shall retain records of all tests and submit them to the contracting officer. A report on the following tests shall be submitted which shall include description of test setup and procedure, photographs from two adjacent sides, documentation of weights used, logs of times for start and finish and any measurements taken during the test. Testing shall meet the requirements as identified below, based on the required SWL.

3.3.13.1. First Article Testing

The following tests shall be performed on the first crane constructed under this contract in addition to the other Factory Testing listed below. During the first article testing the crane system shall not require adjustment or biasing of pressure settings or control limits and the system shall not operate in an overload condition.

a. Tilting Platform Test: While the crane is mounted on a tilting platform simulating the crane mounted in its normal aspect on the cutter with the cutter heeled 20 degrees to port and 10 degree trim the cranes shall demonstrate full operation to lift, skew, lower to boarding position, hold, and launch the full SWL and perform all those functions in reverse. Performing this at rated speeds is not required however movements shall be at no less than half the rated speeds.

b. Static load test: Conduct by slewing the crane to full outboard stop, applying 220% of SWL at a 5 degree aft angle to the crane arm and holding the weight for 5 minutes. Deflection measurements

(forward, vertical, and horizontal) shall be recorded. Upon release, the crane shall return to the original position with no permanent deformities or deflection.

In the event of significant modifications to the structural or mechanical elements over the life of the contract the Coast Guard may require new First Article testing as above.

3.3.13.2. Factory Testing

During the factory testing the crane system shall not require adjustment or biasing of pressure settings or control limits and the system shall not operate in an overload condition. The manufacturer shall include a table of calculated cable drum revolutions per minute for the winch to equate to hoist speeds as part of the required test plan. The following tests shall be performed:

a. Operational Test: Conduct operational test of the crane with no load on the crane, luff boom from lowest level to full height and return. Slew crane from positive stop to positive stop. Lower and raise hook until the two block alarm sounds.

b. Brake test: Conduct by limited lifting (grunt) of a weight equivalent to 150% of SWL to a height sufficient to complete the test, stopping with the brake holding the load, allowing a controlled release of the brake load, brief freefall of about 10ft, and resetting the brake. The load shall be stopped in a distance of no more than 3 feet after resetting the brake.

c. Dynamic Test: Conduct by lifting 125% of SWL, and breasting the load over the entire range of motion of the crane.

d. Slewing speed test: At SWL record luffing speeds over the full range of movement in both directions using normal operating parameters. The crane shall scribe its normal operation range at a rate of 1 rpm (+/- 10sec).

e. Luffing creep test: Under static load of 100% of SWL hydraulic cylinders shall have a measured drift tolerance or creep not exceeding.25 inch (6.35 mm) in 2 hours.

f. Emergency hand hoisting: At 110% SWL; the hand hoist shall be operated to demonstrate the ability to hoist the load.

g. Constant tension winch test: With a load supported by the winch demonstrate the transition from the main winch to the constant tension feature and back to the main winch, the line shall remain taut at all times.

h. Main Winch hoist test: With SWL suspended; demonstrate variable speed, measure and record fast and slow hoist under power. Minimum fast hoist speed shall be 1 ft/sec..

i. Hydrostatic test: The hydraulic system shall be hydrostatically tested at 150% of working pressure for 5 minutes in each direction. The system shall be examined for leaks including all flexible hoses, fittings, tubing, cylinders, and power pack.

j. Hydraulic oil analysis test: An oil sample shall be taken at the completion of testing and shall meet the requirements established IAW section 3.3.12 of this specification.

k. Motors and Controllers: These tests shall be performed in accordance with the requirements of IEEE-STD-45. All electrical components shall pass an operational test.

3.3.13.3. Installation Testing

The installing activity may request the contractor to provide technical services for shipboard testing of each crane system provided to the Coast Guard. The installation activity will provide the labor and equipment for these tests. Tests will consist of Routine Service Life Tests and demonstration of full operation of the unit. This testing shall be completed as a part of the Commissioning Services under paragraph 3.5.5.

3.3.13.4. Routine Service Life Testing

Over the service life of the cutter, the Coast Guard intends to perform operational tests on a routine basis in order to ensure continued equipment operability. The crane design shall provide the cutter the ability to perform the following self-tests, without adjustment or biasing of pressure settings or control limits, and without systems operating in an overload condition:

a. Brake test: Conduct by limited lifting of a weight equivalent to 150% of SWL, holding the load and a controlled release of the load.

b. Dynamic test: Conduct by lifting 125% of SWL, and lifting and breasting the load over the entire range of motion of the crane.

3.3.13.5. Resistance to Marine Environment.

The crane system shall be preserved per Commandant Instruction M10360.3C, Coatings And Color Manual, Appendix A, under 'Machinery, Deck' Option II that requires a Zinc Rich Primer, Epoxy MidCoat, and Polysiloxane topcoat (Note that due to a recent change in M10360.3C, App C, Para E. CG Approved Coatings/Materials, the International brand polysiloxane system using Interfine 979 is no longer

permitted). The topcoat color shall be Spar, FED-STD-595B color # 10371.

All purchased, factory pre-painted components for installation on the weather deck, shall be recoated per M10360.3C above unless the original coating treatment is specifically accepted by the Contracting Officer in advance. Component factory grade enamel paint systems are not acceptable.

Wear surfaces such as winch drums shall be coated with Inorganic Zinc primer as defined in M10360.3C, Appendix C.

All exposed metal surfaces shall be made of 316 Grade Stainless Steel material or otherwise coated in a manner to prevent corrosion from a saltwater environment.

3.4 INTEGRATED LOGISTICS SUPPORT (ILS)

The contractor shall provide the following logistical support and information for the crane. Revised documentation in response to the government's initial review shall be deliverable prior to any subsequent crane deliveries. Modifications made to the equipment provided during the term of the contract must be accompanied by updates of all the following that relate to those changes.

All Integrated Logistics Support documents shall be submitted to the Coast Guard Contracting Officer. The documents shall be submitted in MICROSOFT OFFICE(tm) format as electronic files. One electronic copy of each submitted and revised document shall be submitted on CD-ROM.

3.4.1 Design And Interface Report

The Contractor shall submit a Design and Interface Report for review and comment by the Government. The intent of this document is to enable the government to provide the installing activity the technical information for the development of the installation design and work specification and to ensure interface between new elements and other existing systems are correct, well in advance of the delivery of the first crane. In addition to documenting the marine crane system design, the report shall include a test plan to meet 3.3.13 testing requirements and interface documentation such as weights, interface dimensions and standards, centers of gravity and power requirements. The offeror should not delay submission in order to format it into a smooth document as is required for the Technical Publication; the emphasis on this is the early acquisition of raw technical data, manufacturer's cutsheets, performance curves and similar information is acceptable. The report shall include copies of the following information:

Drawings – (See 3.4.6 Drawings)

a. Equipment Arrangement drawings.

b. Equipment Assembly drawings.

c. Structural Interface drawings

d. Hydraulic System drawings and diagrams.

e. Electrical System drawings and diagrams.

Calculations

a. API certification calculations (API 2C App. E)

b. Hydraulic Load Calculations

Technical Information

a. Marine Hook

b. Winch Unit

c. HPU Pump

d. Electric Motor Data

e. Cylinders

f. Hoses

g. Filters

h. Heat Exchanger

i. Directional Control Valve

j. Valve Controllers

k. Motor Controller

l. Planned paint systems for Crane System components including manufacturers data sheets.

m. First Article and Factory Test Plan for all required structural, hydraulic and electrical tests including verification of pass-fail criteria for each test.

3.4.2 Data for Provisioning

The Contractor shall provide Data for Provisioning for the crane components in accordance with USCG Specification ELC-D-083-0351 for review and comment. Exceptions to this specification are that the list required in 3.3.2.d and 4.1 (identified below as OBRP) shall be for a period of two year's support vice one and that the delivery schedule shall be per this contract. This shall include end items as installed as well as the

individual parts of each end item, Original Equipment Manufacturer (OEM) part numbers, OEM's name and address, quantity used in each piece of equipment, and keying to any provided drawings. The price listing shall identify prices during the initial and all option years of the contract.

3.4.3 Recommended Spare Parts

3.4.3.1. On Board Repair Parts (OBRP)

The Contractor shall identify the manufacturer's recommended spare parts list for On-Board Repair Parts within the Technical Publication required in 3.4.4 and in the Data for Provisioning (including pricing) required in 3.4.2. Within 3 months of receipt of the government review of the Technical Publication assigning the government part numbers, one set of OBRP shall be provided to the Coast Guard for each previously delivered crane. OBRP shall be delivered concurrent with delivery of each subsequent shipset of equipment. Each crane set of OBRP shall be packaged together and identified as "On-Board Repair Parts" and by crane serial number, as required by section 5.0 PRESERVATION, MARKING, AND PACKAGING. Parts shall be identified by bar-coding in accordance with ELC-D-000-0100.

The parts on the recommended OBRP list shall be sufficient to perform shipboard maintenance on the equipment for two years. The list shall include gaskets and seals as necessary to install components, and general disposable components. The list shall also include any normal wear / spare / repair parts which are critical to the operation of the system. Components required for overhaul of the equipment shall not be included on this list.

3.4.3.2. Depot Level Spare Parts

The Contractor shall identify the manufacturer's recommended list for Depot Level Spare Parts within the Technical Publication required in 3.4.4 and in the Data for Provisioning (including pricing) required in 3.4.2.. The Depot Level spare parts list shall include all long lead time items or Coast Guard unique parts, assemblies and subassemblies that the Contractor believes are necessary to support fleet repairs for two years. Long lead time parts are defined as any part which will take longer than 45 days by the vendor to ship once they receive the order. Coast Guard unique parts are defined as any part, assembly or subassembly that is only installed on systems provided to the Coast Guard. The spare parts list shall be quantified into the number of spares needed per marine crane unit supplied.

All spare parts necessary for overhaul of a unit shall be identified in the Technical Publication.

The government will determine the routine spare parts to be supported (stocked) by the government, based on Data For Provisioning and ILS submissions. Actual provision of these parts is not included within the scope of this contract.

3.4.3.3. Initial Spare Parts

The Contractor shall provide an initial routine or disposable spare parts kit with each shipset of equipment, sufficient to operate the systems for not less than 6 months, assuming no major component failure. This kit shall include spare fuses, filters, and lamps for each of these parts installed and similar components which may normally fail during the six month period. These parts shall be packaged separately from all other parts, identified as "Initial Spare Parts", and a copy of the spare parts list shall be included in the shipping container and clearly marked. These parts shall not be used in the initial installation of the crane. Upon receipt of the government part numbers the contractor shall include that information and bar coding in accordance with ELC-D-000-0100 with subsequent deliveries of Initial Spare Parts shipsets.

3.4.4 Technical Publications

The Contractor shall provide a new technical publication for the installation, operation and maintenance of the Marine Crane Unit for review and comment by the Government. The technical publication shall be in accordance with Technical Publications for USCG ELC Auxiliary Machinery Branch Specification D-086-0483.

Government comments will be returned along with the assignment of a Coast Guard Technical Publication number and government part numbers for parts lists within the publication, for incorporation into the draft document and resubmittal.

3.4.5 Software

The contractor shall provide a backup version of any software for operation of any/all programmable hardware on the boat crane for each crane delivered. The submission shall include a description for all basic elements such as contacts, coils, and registers. During the life of the contract the contractor shall be responsible to provide revised software when any programmable elements of the crane are changed or when any programming of the crane is otherwise changed.

3.4.6 Drawings

The Contractor shall provide new drawings for review and comment by the Government. The drawings shall be in accordance with Drawings for USCG ELC Auxiliary Machinery Branch Specification D-085-0482. Elements of the drawings may be incorporated into the Technical Publication or the

Design and Interface Report, in this case separate electronic copies of the drawings shall be provided as deliverables as part of the electronic version of those documents. The Contractor shall provide at least Equipment Arrangement drawings, Equipment Assembly drawings, Structural Interface drawings, Hydraulic System drawings, and Electrical System drawings. During the life of the contract the contractor shall update and submit drawings to the contracting officer after adding/replacing new hardware or changing configuration.

3.4.7 Maintenance Procedure Cards

The Contractor shall provide new maintenance recommendations for the equipment, including all maintenance activities that are required to keep the system operating properly in accordance with Preparation of Maintenance Procedure Cards for USCG ELC Auxiliary Machinery Branch, D-086-0484.

3.4.8 Review and Approvals

3.5 TECHNICAL SUPPORT

3.5.1 Technical Representative Services

The Contractor shall provide Technical Representative services for both warranty response and for non-warranty technical support. Non-warranty technical support shall be at the government's expense at rates proposed in the contractor's offer. The costs of transportation, lodging, meals and incidental expenses incurred by the Contractor's personnel shall be in accordance with the Federal Acquisition Regulation FAR Part 31.205-46.

A Technical Representative shall be available for response to questions by telephone within 24 hours of being contacted by the Contracting Officer or Contracting Officer's Technical Representative. The Technical Representatives shall also be available to attend vessels and provide casualty response services in any port within the East Coast and Gulf States of the United States and international Canadian East Coast, Gulf of Mexico, and Caribbean ports, within 72 hours of a request by the Contracting Officer. Routine technical support services shall be scheduled at least 14 days in advance.

Only the Contracting Officer shall establish the dates that Technical Support on-site services are required for support under this contract.

Representatives provided under this contract shall be regularly in the business of providing technical support services to crane and crane system users and operators. The Contractor shall warrant and certify that all Technical Representatives are fully qualified and have experience working on this or similar type marine crane systems.

3.5.2 Warranty Response

The Contractor shall provide technical support for warranty investigation and corrective actions. The cost of personnel, transportation, lodging, meals and incidental expenses incurred by the Contractor while performing warranty work shall be borne by the Contractor as part of the warranty.

3.5.3 Non-Warranty Technical Support Services

The Contractor may be requested to provide non-warranty technical support services over the term of the contract. Upon request, the Contractor shall provide a Technical Representative for on-site services which includes troubleshooting, repairs, corrective and preventative maintenance, component removal, component installation, failure analysis, inspections, alignment and other technical services. If the crane or subsystem components can be repaired in-situ, the Technical Representative shall assist ship's force, a subcontractor, or those assigned by others to repair the crane or components on-site. If the crane or subsystem components require removal, the Technical Representative may be required to assist with the removal and ensure that proper removal procedures are utilized. The Technical Representative may be required to assist in the installation of replacement crane units or subsystem components. The Technical Representative shall be able to perform all alignment and testing procedures required for proper operation of the crane and subsystem components. The Technical Representative shall provide technical oversight for all repairs, take critical readings, generate parts lists, and oversee post-repair testing. The Technical Representative shall provide all special tooling required, including components to accomplish the repairs. All measuring and test equipment shall be calibrated to industry standards. For repairs that cannot be accomplished onboard the cutter, the Technical Representative shall provide a detailed recommendation in writing to the Contracting Officer, as to the feasibility of repairs at the Contractor's facility or the need to replace the entire marine crane unit or module. In the event of problems arising in the availability of parts or logistical problems such as a shipyard, sub-contractor, or crane service availability, etc, the Technical Representative may be requested to provide services in stages requiring additional travel, lodging, etc. The Contracting Officer will provide direction.

3.5.4 Reports

A written report of all work performed by the Technical Representative, or under his supervision, shall be submitted to the Commanding Officer of the respective cutter and to the Contracting Officer within 48 hours of the completion of repair work. Submission of this report via email is acceptable. Results of an urgent nature shall be first transmitted to the Contracting Officer via phone or email, in order to speed up the decision process required. Technical Representative Reports shall include the following information:

Technical Representative's name and affiliation.

Telephone and/or email contacts.

Name and Hull Number of the cutter involved.

Time of arrival and departure.

Crane model and serial number.

Conditions found.

Repairs required.

Parts required.

Parts expended.

Likely cause of failure(s).

Recommendations.

Expense report.

3.5.5 Commissioning / Installation Testing Services

The Contractor may be requested by the Contracting Officer to provide Commissioning Services to commission the equipment. The government reserves the right to install marine crane systems without contractor support. Commissioning Services shall include a technical representative to provide technical assistance to the independent installing activity to ensure that the equipment is installed correctly and to observe and/or participate in the shipboard Installation Testing in 3.3.13.3. The Contractor shall prepare a statement regarding the completion or waiver of commissioning services, for signature by the Commanding Officer of the respective cutter (or, if the ship's personnel are absent during the shipyard period, the Ship's Superintendent), to document completion of services or waiver of same. The Technical Representative shall obtain a release signature before departure. The Contractor shall forward a copy of the signed release document to the Contracting Officer, with a Commissioning Technical Report.

3.5.6 Training Services

The Contractor may be requested by the Contacting Officer to provide Pierside and Underway Operational and Maintenance Training Services. Training materials and aids shall be based on the operation, maintenance and adjustment information included in the Technical Publication and includes using both normal and emergency procedures. Pierside Training services shall include informal training of several teams over 1 in-port work-day (up to 8 hours). Underway Training shall include multiple launch and retrieval evolutions using several teams over at least one operational work-

day (up to 12 hours) plus any necessary transit time to the operating area. Pierside and Operational Training may not be on consecutive days and may be separated by weeks or months. Training aids shall be developed by the Contractor beyond the information in the Technical Publication and shall include step by step instructions and photos or diagrams showing important steps of the processes. It shall be focused towards being used for follow-on training by ship's personnel for new ship's personnel after the initial training by the contractor. They shall be developed in Microsoft Office compatible file structure, shall become the property of the government, and shall be forwarded to the Contracting Officer for review, prior to use. Alternate means of virtual training may be proposed but must be approved by the Contracting Officer.

The Contractor shall prepare a statement regarding the completion or waiver of training services, for signature by the Commanding Officer of the respective cutter, to document completion of services or waiver of services. The Technical Representative shall obtain a release signature before departure acknowledging completion of the training. The Contractor shall forward a copy of the signed release document to the Contracting Officer, together with a list of the personnel who received training.

4.0 QUALITY ASSURANCE AND WARRANTY

4.1 GENERAL –

The contractor shall maintain an inspection system which shall insure that each item offered to the Coast Guard for acceptance or approval conforms to the contract requirements. The inspection system shall be documented and available for review by the Coast Guard.

4.2 RECORDS/REPORTS –

The contractor shall maintain records of all inspections and tests. The records at a minimum shall indicate the nature and number of observations made, the number and type of deficiencies found, and the corrective action taken. The Contractor shall provide the CG Quality Assurance Inspector with completed copies of the certification testing results upon completion of testing. A copy of the test certification, including any tests by outside contractors or tests of subcontracted materials, shall be provided to the Contracting Officer when issued.

4.3 CALIBRATION SYSTEM –

The contractor, as well as any subcontractors, shall be required to maintain a test equipment calibration program in compliance with ANSI/NCSL Z540-1. The program shall be documented and traceable to the National Institute of Standards (NIST).

4.4 RESPONSIBILITY FOR INSPECTION –

The contractor shall be responsible for the performance of all inspection requirements specified herein, including 3.3.13 Testing. The contractor shall provide space, personnel, and test equipment for conducting all inspection requirements. All inspection and testing shall be performed at the contractor's plant or at other facilities acceptable to the Coast Guard. The Coast Guard reserves the right to verify or have performed any of the inspections that are deemed necessary to assure that supplies and services conform to the prescribed requirements.

4.5 RESPONSIBILITY FOR COMPLIANCE –

All items shall meet the provisions of Sections 3 & 5 of this specification. The inspections set forth in this specification shall become part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the government for acceptance comply with all requirements of the contract. Sampling for quality conformance does not authorize submission of known defective material (either indicated or actual) nor does it commit the government to acceptance of defective material.

4.6 QUALITY ASSURANCE PLAN -

The contractor/subcontractor shall establish and maintain a Quality Control Plan during the manufacture of the crane system in accordance with in Section E, to ensure the contractor conforms to the contract requirements. During the performance of this contract, the inspection system and manufacturing and testing processes shall be subject to review by the Contracting Officer/Quality Assurance Representative.

If an item fails to pass any inspection or test, the contractor shall report the failure and the recommended fix to the Contracting Officer. If approved, the corrective action on the materials or processes shall be taken. The Contracting Officer reserves the right to totally reject any failed item without considering any suggested corrective action.

5.0 PRESERVATION, MARKING AND PACKING

Each Marine Crane System and all parts supplied shall be packaged in accordance with ELC Specification Equipment Preservation, Packaging and Marking Standard Requirements for USCG ELC Auxiliary Machinery Branch D-084-0481.

6.0 NOTES:

6.1 GOVERNMENT & COMMERCIAL DOCUMENT SOURCES

6.1.1 Government Documents

Specification and Standards (DODISS Documents)
Standardizations Document Order Desk
700 Robbins Avenue
Building #4, Section D

Philadelphia, PA. 19111-5094
215-697-2667
http://assist.daps.dla.mil/quicksearch/

DOD & Navy Publications and Forms (Other than DODISS)
Naval Publication and Forms Center
5801 Tabor Ave.
Philadelphia, PA. 19120
215-697-2000

General Printing Office
http://www.gpoaccess.gov/cfr/index.html

USCG Engineering Logistics Center
Contracting Officer, ELC-045
2401 Hawkins Point Road
Baltimore, MD. 21226-5000
410-762-6463 (Sharon Jackson)
ATTN: Contracting Branch, code 045

COMDTINST M10360.3C – Coatings And Color Manual, 2005
http://www.uscg.mil/ccs/cit/cim/directives/CIM/CIM_10360_3C.pdf

International Maritime Organization
4 Albert Embankment
London SE1 7SR
United Kingdom
http://www.imo.org/home.asp
e-mail: publications-sales@imo.org
Tel : + 44 (0)20 7735 7611
Fax: + 44 (0)20 7587 3241

National Telecommunications & Information Administration (NTIA)
Washington, DC 20230
http://www.ntia.doc.gov/osmhome/redbook/redbook.html

6.1.2 Commercial Documents

American Gear Manufacturers Association (AGMA)
500 Montgomery Street
Suite 350
Alexandria, VA 22314-1560
http://www.agma.org//AM/Template.cfm?Section=Home

American National Standards Institute (ANSI)
1430 Broadway
New York, NY 10018
212-642-4900
http://www.ansi.org

American Petroleum Institute (API)
1220 L Street, NW
Washington, D.C. 20005-4070
http://www.api.org

American Society for Testing & Materials (ASTM)
1916 Race Street
Philadelphia PA. 19103-1187
215-299-5585
FAX 215-977-9679
http://www.astm.org

Institute of Electrical and Electronics Engineers (IEEE)
Publications Office
10662 Los Vaqueros Circle
PO Box 3014
Los Alamitos, CA 90720-1264
http://www.ieee.org

International Standards Organization (ISO)
ISO Central Secretariat
1. rue de Varembo
Ch-1211 Geneva 20
Switzerland
http://www.standardsinfo.net/isoiec/index.html

National Electrical Manufacturers Association (NEMA)
1300 North 17th Street, Suite 1847
Rosslyn, Virginia 22209
http://www.nema.org

National Fluid Power Association (NFPA)
3333 N. Mayfair Road, Suite 211
Milwaukee, WI 53222-3219
http://store.nfpa.com/

Society of Automotive Engineers Inc. (SAE)
400 Commonwealth Drive
Warrendale, PA. 15096
412-776-4841
FAX 412-776-5760
http://www.sae.org

REVISION No. G . **CHANGE No. .**

ATTACHMENT J.2

BAR CODING FOR US COAST GUARD ENGINEERING LOGISTICS CENTER MATERIAL

D-000-0100

ORGINATED BY E.R. Fischer. DATE 10/91.

ORIGINATOR'S COMMAND Engineering Logisitcs Center (ELC).

DEPARTMENT / DIVISION Propulsion Machinery Branch (026).

INTERNAL REVIEWER E. Brubaker (Rev. G). DATE Feb. 06 .
.

SWORB APPROVAL _____. DATE _____.

BAR CODING FOR U.S. COAST GUARD
ENGINEERING LOGISTICS CENTER PROCURED MATERIAL

1.0 SCOPE

1.1. This specification outlines the Bar Code format, layout, & content requirements for all Engineering Logistics Center Bar Coding, as well as all label variables available.

1.2. CLASSIFICATION

1.2.1. Labels - As illustrated and classified in MIL-PRF-61002.

1.2.2. TYPE "V" Special (see section 3.2.2.a. herein [TYPES]).

1.2.3. GRADES

a. Multiple Durability Requirement.

b. Adhesion, Condensation. Abrasion, Backing Sheet, and UV condensation.

c. Adhesion and Backing Sheet Requirements Only.

d. Special Durability Requirements (specify).

1.2.4. STYLES

1. Non-Porous Surfaces

2. Porous Surfaces

3. Special surfaces (i.e., styrofoam, rubber, composites.

1.2.5. COMPOSITION

a. Paper (with or without laminate).

b. Plastic (with or without laminate), materials such as polyester, mylar, vinyl, etc.).

c. Polymide (with or without laminate).

d. Metal (specify), (includes steel, anodized aluminum, etc).

e. Anodized, Photo Sensitive, Aluminum (matte finish).

f. Ceramic.

g. Special (specify).

2.0 APPLICABLE DOCUMENTS (use as required)

2.1. DOCUMENT AVAILABILITY - See section 6.0.

2.2. GOVERNMENT DOCUMENTS - The following specifications and standards form a part of this specification to the extent specified herein. Unless otherwise specified, the documents listed here by number and date shall be those in the Department of Defense Index of Specifications and Standards (DODISS) and supplements thereto.

2.2.1. SPECIFICATIONS

a. MIL-PRF-61002A DATED 25 Sept 1995, Pressure-Sensitive Adhesive, for Bar Coding.

2.3. COMMERCIAL DOCUMENTS - The following documents form a part of this specification to the extent specified herein. The documents shall be the version listed by number and date from the referenced industry organization. Commercial documents may also be listed in the Department of Defense Index of Specifications and Standards (DODISS).

2.3.1. American National Standards Institute / AIM (ANSI/AIM)

a. ANSI/AIM-BC1, DATED 1995, Uniform Symbology Specification Code 39.

2.4. SPECIFICATION ORDER OF PRECEDENCE - In the event of a conflict between the text of this specification and the references cited herein, this specification shall take precedence.

3.0 REQUIREMENTS

3.1. BAR CODE

a. All bar coding required herein shall be Code 39, also called Code 3 of 9 in accordance with ANSI/AIM BC1

b. The bar coding shall not replace any other marking required, but be in addition to it.

3.2. LABELS & LABELING

3.2.1. Labels

a. The National Stock Number (NSN) shall be bar coded on all primary packaging and shipping containers, or palletized equipment, or directly on the equipment, where the NSN is required marking. No other information is required to be bar coded unless specified in the contract.

b. Bar code shall be black with white, or otherwise contrasting background.

c. The bar code label shall also contain the printed NSN placed directly below the bar code. (See Figure 1.) The bar code label shall not take the place of the printed NSN required as part of the overall marking requirements.

d. Bar code may be placed on the same label as all other required marking, or may be on its own separate label. If on its own label, the bar code shall be placed adjacent to other marked information without obstructing other markings.

3.2.2. CLASSIFICATIONS

a. TYPES - (V only) May be produced in roll or sheet form, and shall be large enough to contain all of the information required, and meet all spacing requirements in ASTM/AIM BC1.

b. GRADES - All grades shall be as specified in MIL-PRF61002 see sections 3.2.1, & 6.1.2.3.

1) Intended for applications where the labels will endure prolonged out door conditions (longer than 2 weeks).

2) Intended for long term indoor applications with short term outdoor exposure (less than 2 weeks).

3) Intended for use when short term shipping or indoor conditions are expected.

4) When none of the above grades will suffice, see MIL-PRF61002 section 3.2.1 & 3.2.2.

c. STYLES - Label Mounting Surfaces

1. Non-Porous Surfaces

2. Porous Surfaces

3. Special Surfaces (i.e., styrofoam, rubber, composites) see 3.3.

d. COMPOSITION - The primary consideration is whether the label should be a paper based or plastic based label. See MIL-L-61002 section 6.1.2.4 for further clarification.

a. Paper (with or without laminate)

b. Plastic (with or without laminate), (includes materials such as polyester, mylar, vinyl,etc.).

c. Polymide (with or without laminate).

d. Metal (specify), (includes steel, anodized aluminum, etc).

e. Anodized, Photo Sensitive, Aluminum (matte finish)

f. Ceramic.

g. Special (specify).

3.2.3. LAMINATE - A clear laminate placed over the label may be required to meet the durability requirements for a given grade. If so required the final composite label shall be tested as a complete unit.

3.2.4. MARKING METHOD - The bar code marking method shall be in accordance with the selected label composition and tables 4 & 5 in MIL-L-61002.

3.3. ADHESIVE - The adhesive shall be pressure sensitive, water insoluble, and shall require no

moisture, heat, or other preparation prior to, or after application to clean dry surfaces.

a. Refer to MIL-PRF-61002 section 3.1.6 if any other surface condition or method of application is specified.

3.4. NOTIFICATIONS & INSPECTIONS - The contractor shall be responsible for notifying the Contracting Officer at least seven (7) calendar days prior to said contractor being ready for any Quality Assurance (Q A.) inspections or monitored testing as required herein.

4.0 QUALITY ASSURANCE (QA)

4.1. RESPONSIBILITY FOR INSPECTION - The contractor is responsible for the performance of all inspection requirements as specified herein. The contractor may use his own or any other facilities for the performance of the inspections and tests, unless disapproved by the government. The government reserves the right to perform any of the inspections and tests set forth in this specification at any time.

4.2. RESPONSIBILITY FOR COMPLIANCE - All items shall meet the provisions of Sections 3 & 5. The inspections set forth in this specification shall become part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the government for acceptance comply with all requirements of the contract. Sampling for quality conformance does not authorize submission of known defective material (either indicated or actual) nor does it commit the government to acceptance of defective material.

4.3. TESTING - The testing as required in MIL-PRF-61002 shall be waived. The bar code shall be verified at its destination by a bar code reader.

4.3.1. The contractor shall verify readability of the bar coding.

5.0 PRESERVATION & PACKAGING, PACKING, & MARKING - All Labels shall be attached to their proper containers prior to shipment and quality assurance inspection.

6.0 NOTES

6.1. GOVERNMENT & COMMERCIAL DOCUMENT SOURCES

6.1.1. GOVERNMENT DOCUMENTS

a. Specifications and Standards (DODISS Documents)

Standardization’s Document Order Desk
700 Robbins Avenue
Building #4, Section D
Philadelphia, PA 19111-5094
215-697-1187

b. DOD & Navy Publications and Forms (Other Than DODISS)

Naval Publication and Forms Center
5801 Tabor Ave.
Philadelphia PA 19120
215-697-2000

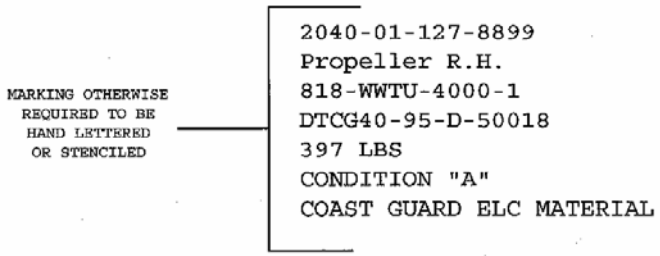
6.1.2. COMMERICIAL DOCUMENTS

a. AIM USA (Standards Required Herein Approved by ANSI 1995)

AIM-USA
634 Alpha Drive
Pittsburgh Pa. 15238-2802
Phone 412-963-8588
Fax 412-963-8753

USCG - ELC
D-000-0100
03/06

FIGURE 1
SAMPLE ONLY
ACTUAL MARKINGS WILL DIFFER



(STOCK NO.HRI) 2040-01-127-8899

IF THE COMBINED MARKING OPTION IS USED THE BAR CODE CAN BE PLACED AS SHOWN OR ON EITHER SIDE OR OVER TOP OF THE OTHER REQUIRED MARKING.

REVISION No. _-_

ATTACHMENT J.2

EQUIPMENT UNIT PRESERVATION, PACKAGING AND MARKING, STANDARD REQUIREMENTS FOR USCG ELC AUXILIARY MACHINERY BRANCH

D-084-0481

INITIATED BY: M. Tilyou DATE 03/22/06

REVISED : M. Tilyou DATE

Engineering Logistics Center, Equipment Management Division

INTERNAL REVIEW ELC-025: _____ DATE:

SOWRB APPROVAL ____DATE_

1. SCOPE

1.1. This specification describes the general preservation, packing and marking requirements for Equipment Unit procurement contracts, and for related Parts.

2. APPLICABLE DOCUMENTS

2.1. ORDER OF PRECEDENCE – In the event of a conflict between the text of this specification and the references cited herein, this specification shall take precedence.

2.2. GOVERNMENT DOCUMENTS

2.2.1. Coast Guard Documents

2.2.1.1. ELC-D-000-0100-G – Bar Coding for USCG ELC Material (2/06)

2.2.2. Federal Standards

2.2.2.1. FED-STD 595B, Chg 1, 1994, Colors Used in Government Procurement.

2.3. Commercial Documents

2.3.1. American Society for Testing and Materials

2.3.1.1. ASTM D-3951 (2004) Standard for Commercial Packaging.

3. REQUIREMENTS

3.1. DEFINITIONS:

3.1.1. Within the context of this document, the following terms are defined:

3.1.1.1. Equipment Unit - shall be defined as a complete equipment system as intended for installation as part of an Engineering Change (E/C) or equivalent.

(a) Example: A skid mounted fire pump system with electric motor and motor controller is an Equipment Unit intended for use in an Engineering Change. The complete system is not a normally stocked assembly. If the Equipment Unit is stored in a warehouse, it is there only on an interim basis until the Engineering Change is completed.

3.1.1.2. On-Board-Repair-Parts (OBRP) – shall be defined as the subset of Parts which are stored onboard the cutter.

(a) Example: Pump Seal kits and other consumable items stored on the cutter are OBRP,

3.1.1.3. Parts - shall be defined as end items, repair parts, parts kits, On-Board-Repair-Parts, long supply parts, etc. which have been

assigned National Stock Numbers or Activity Control Numbers for storage, either in a warehouse or onboard a cutter, or both.

(a) Example: A Pump Impeller is a repair part normally stored in a warehouse. A Fire Pump is an end item which is normally stores in a warehouse.

3.1.2. National Stock Numbers (NSN) and Activity Control Numbers (ACN) are utilized to track and account for Parts carried onboard Coast Guard cutters.

(a) All Parts in the government warehouse have an NSN or ACN.

(b) All OBRP shall have an NSN or ACN. - The exception shall be Parts which are provided as part of the “initial” or first Equipment Unit distribution (only), which may be distributed prior to the government assigning NSNs and ACNs to the respective parts.

3.2. PRESERVATION: The following requirements are applicable to Equipment Units, OBRP and to Parts.

3.2.1. Exposed shafting and working machined surfaces, gear-trains, the inside of gearboxes, and other surfaces dependent on lubricant for preservation shall be lubricated or coated with an appropriate preservative suitable for protection of equipment stowed in an unheated warehouse for up to one year. Preservatives shall be compatible with the intended working lubricants. Special treatments should not be necessary to remove preservatives.

3.2.2. Piping systems and the inside of individual components shall not be exposed to contaminants during shipment. All piping interface points shall be sealed with commercial grade plastic or metallic caps, plastic or metallic plugs, mating blanked covers, or with blank flanges attached with bolts. Plastic bags and duct tape are not acceptable.

3.2.3. Warning tags shall be attached to all gearboxes indicating that they have been drained, preserved with a specific product, and require filling with lubricant before equipment use.

3.2.4. Major components shall be shrink-wrapped or otherwise covered and sealed to prevent water damage. To prevent adhesion between protective coverings and painted surfaces, protective coverings shall not be applied until the paint has cured.

3.2.5. Documents and other enclosures shall be sealed in a waterproof plastic bag, which shall be permanently affixed to the inside of the shipping container in a conspicuous location when the container is opened.

3.3. EQUIPMENT UNIT REQUIREMENTS

3.3.1. EQUIPMENT UNIT - PACKAGING Each Equipment Unit shall be packaged separately, to permit direct shipment to a Coast Guard activity, or permit long term storage by the Coast Guard and reshipment to a Coast Guard activity, without breaking down the packaging. Each Equipment Unit shall be packaged in as few shipping containers as reasonably possible. The objective is to retain all components, (especially serial numbered elements) together during transportation and storage.

3.3.1.1. All modules of the Equipment Unit shall be contained within the Equipment Unit shipping container(s).

3.3.1.2. Loose components intended for use during installation shall be packaged together, labeled for their intended use, and included within the Equipment Unit shipping container(s).

3.3.1.3. OBRP which are being provided directly to the vessel as part of the Equipment Unit delivery, shall be individually packaged as Parts (see 3.4, including markings and labels), then repackaged together and labeled as “On-Board-Repair-Parts”, and included within the Equipment Unit shipping container(s).

(a) All OBRP shall be identified and accounted for by their National Stock Number on the packing list.

(b) Where OBRP have not yet been assigned National Stock Numbers, the notation “NSN Pending“ shall be made on the packing list, after the OEM Part Number.

3.3.1.4. A packing list shall be prepared for each box or shipping container. The packing list shall identify National Stock Numbers of OBRP included in the shipment. The packing list shall include how many containers or boxes comprise one Equipment Unit.

(a) A copy of the packing list shall be electronically forwarded to the Contracting Officer for use as a check-off sheet by receiving personnel.

(b) A copy of the list shall be posted inside a waterproof, clear plastic envelope on the outside of one shipping container.

3.3.2. EQUIPMENT UNIT - SHIPPING CONTAINERS: Material shall be packed in a container meeting ASTM D3951 and the requirements herein. The container shall be suitable for handling with a crane or forklift.

3.3.2.1. Within the primary shipping container, large items (length + girth of box greater than 130 inches) and items over 70 lbs shall also be packaged in skid mounted shipping containers, suitable for handling with a forklift.

3.3.2.2. Skid mounted shipping containers shall be suitable for use by the government for reshipment to other activities.

3.3.2.3. Shipping containers shall be completely enclosed and structurally suitable for stacking at least two high. The containers shall be suitable for outside covered stowage in the weather. Shipping containers shall have doors for access, or be assembled with screws to permit ease of removal of the cover or lid from the base.

3.3.2.4. Containers shall be suitable for interior or exterior multi-year stowage, as specified by the contract. Metallic containers shall be painted with commercial undercoat and commercial painting systems, suitable for multi-year stowage without rust and degradation.

(a) Unless otherwise directed by referencing contract, the finish or color coat of painting systems shall be Light Gray - Fed Std 595 #26373, or Spar – Fed Std 595 #10371, or their commercial equivalent.

3.3.2.5. Shipping containers intended for re-use shall be stenciled “REUSABLE CONTAINER” and “HANDLE WITH CARE” on the container.

3.3.2.6. Shipping containers with special packing / unpacking instructions shall be stenciled “CAUTION – THIS EQUIPMENT MAY BE SERIOUSLY DAMAGED UNLESS UNPACKING INSTRUCTIONS ARE FOLLOWED CAREFULLY.” Followed by a notation of the location of the instructions.

3.3.2.7. Shipping containers which have been rented for the delivery of the Equipment Unit, and are not government property, shall be stenciled “UNPACK IMMEDIATELY AND RETURN TO SHIPPING AGENT”. Painting requirements do not apply.

3.3.3. EQUIPMENT UNIT - PACKING:

3.3.3.1. Restraints, packing and support cribbing shall restrain and protect the Equipment Unit and all modules, enclosures and attachments from damage during shipment and the shifting of materials:

(a) Major components shall be bolted to the container floor or framing system. Large components shall be further restrained from movement within the container and between one another.

(b) Loose components shall be intermediate boxed and shall be restrained within the shipping container.

(c) Suitable cribbing shall be provided to prevent damage during shipment. Loose fill packing materials shall not be used.

(d) Protrusions, projections, corners, sharp edges and fragile areas shall be cushioned as required to protect the equipment and to prevent rupture of shrink-wrap materials.

3.3.4. EQUIPMENT UNIT - MARKING

3.3.4.1. An Acquisition Control Number (ACN) will be assigned to the Equipment Unit by the government for warehouse and shipment tracking purposes.

3.3.4.2. Each container shall be marked at least twice, except as noted.

(a) General shipping containers shall be marked in the upper left-hand corner of the two longest sides. If the lettering is stenciled, the lettering shall be at least ½ inch high or 36 point type, in black print on a highly contrasting background.

(b) For very large shipping containers such as trailer vans, ISO shipping containers or equivalent, the container shall be marked in the upper left-hand corner of the left side, and on the rear access door. Lettering shall be at least 1 inch high, in black print on a highly contrasting background.

(c) Shipping containers which have been rented, and are not government property, shall be marked at least once, in at least ¼ inch high or 18 point high lettering on a removable information plate, temporarily affixed to the rear access of the container.

3.3.4.3. This marking shall consist of the Acquisition Control Number (ACN), Item Name, Contract Number and CLIN Number, Delivery Order Number, Box X of Y, Shipping Weight, Condition Code, and Quantity and unit of issue, and the words U.S. COAST GUARD ELC MATERIAL. For example:

ACN	0000-00-000-0000
ITEM NAME	EQUIPMENT UNIT FOR ENGINEERING CHANGE XXX
CONTRACT NUMBER	DHS-00-00-0-00000, CLIN XX
DELIVERY ORDER NUMBER	DELIVERY ORDER XXX
BOX X OF Y	BOX X OF Y
SHIPPING WEIGHT	XX LBS GROSS WT (THIS BOX)
CONDITION CODE	CONDITION “A”
QUANTITY & UNIT OF ISSUE	1 – SHIPSET
	U.S. COAST GUARD
	ELC MATERIAL

3.3.4.4. Bar Code Labeling: All shipping containers shall have a bar code label applied, or incorporated into the packaging label. Bar Code labels shall be in accordance with ELC specification D-000-0100-G. The actual labels shall be Type V, Grade B, Style 2, Composition “B” with or without plastic laminate. Each label shall contain

encoded data for the ACN, contract number, and the Delivery Order Number, as applicable.

3.4. PARTS REQUIREMENTS:

3.4.1. PARTS - PACKAGING: Each Part shall be packaged separately, or in its designated unit quantity.

3.4.1.1. All parts shall be identified and accounted for by their NSN or ACN on the packing list.

3.4.1.2. Large parts shall be shrink-wrapped or otherwise covered and sealed to prevent water damage. Small parts shall be enclosed in clear plastic packaging.

3.4.1.3. Multiple identical parts may be repackaged in designated quantity units (box lot, case lot, pair, etc) for shipping purposes. The packaging shall be identified by the words MULTI-PACK and the quantity per package.

3.4.1.4. Documents and other enclosures shall be sealed in a waterproof plastic bag, which shall be permanently affixed to the inside of the shipping container in a conspicuous location. The last line of the package label shall contain the words “DOCUMENTS ENCLOSED”

3.4.1.5. Where Pull Test Certificates or other required certifications are attached directly to the Part, (versus loose and enclosed), the last line of the package label shall contain the words “CERTIFICATION ATTACHED.”

3.4.2. PARTS - CONTAINERS: Parts shall be packed in containers meeting ASTM D3951 and the requirements herein.

3.4.2.1. Large Items:

(a) Large items (length + girth of box greater than 130 inches) and items over 70 lbs shall be packaged in skid mounted shipping containers, suitable for handling with a forklift.

(b) Containers shall be completely enclosed and structurally suitable for stacking at least 2-high. The containers shall be suitable for inside covered stowage. Containers shall be assembled with screws to permit ease of removal of the cover or lid from the base.

(c) Major components shall be bolted to the framing system.

(d) Containers intended for re-use shall be stenciled “REUSABLE CONTAINER” and “HANDLE WITH CARE”.

(e) Containers with special packing / unpacking instructions shall be stenciled “CAUTION – THIS ITEM MAY BE SERIOUSLY DAMAGED UNLESS UNPACKING INSTRUCTIONS ARE

FOLLOWED CAREFULLY.", followed by a notation of the location of instructions.

3.4.2.2. General Items:

(a) General components weighing less than 70 lbs may be packaged in commercial reinforced cardboard packaging, or its equivalent, or packaged in a skid mounted shipping container. If packaged in a skid mounted shipping container, 3.4.2.1 above applies.

(b) Reinforced cardboard packaging shall be sealed, but shall be suitable for being opened (without total packaging destruction) for inspection, resealing and subsequent shipment to the fleet.

(c) The reinforced cardboard packaging shall be completely enclosed and suitable for stacking. The packaging shall be suitable for long-term inside storage in a warehouse.

3.4.2.3. Small Items:

(a) Small items which can fit into express carrier standard packaging (maximum 17.5 in x 12.5 in x 3 in box, or 38 x 6 x 6 x 6 triangular tube) for shipment with appropriate cushioning may be sealed in clear plastic packaging, or packaged in a commercial reinforced cardboard packaging. If packaged in a cardboard package, 3.4.2.2 above applies.

(b) Plastic packaging shall be 6 mil thickness, and sufficiently clear for part inspection. Plastic packaging shall have provision for breathing to prevent condensation, unless the packaging provides a hermetic seal.

3.4.3. PARTS – PACKING AND CRIBBING:

3.4.3.1. Restraints, packing and cribbing shall restrain and protect the Parts within their packaging from damage during shipment and storage:

(a) Major Parts shall be bolted to the shipping container floor or framing system, or otherwise restrained from movement within the shipping container.

(b) Loose components shall be intermediate boxed and shall be restrained within the shipping container.

(c) Suitable cribbing shall be provided to prevent damage during shipment.

(d) Loose fill packing materials shall not be used.

(e) Protrusions, projections, corners, sharp edges and fragile areas shall be cushioned as required to protect the part and to prevent rupture of shrink-wrap materials.

3.3.4. PARTS - MARKING:

3.3.4.1. Each part or part container shall be marked. Lettering shall be black applied on a highly contrasting background.

(a) Large part shipping container lettering shall be at least ½ inch high or 36 point type. Stenciling is acceptable.

(b) General Packaging lettering shall be at least ¼ inch high or 18 point type.

(c) Plastic Bag lettering may be 12 point lettering.

3.3.4.2. Markings shall consist of the National Stock Number (NSN), Item Name, Model or Serial Number, Contract Number, Contractor Part Number, Box X of Y, Shipping Weight, Condition Code, Quantity and Unit of Issue. For example:

NSN	0000-00-000-0000
ITEM NAME	FIRE PUMP
MODEL OR SERIAL	XXXXXXX
CONTRACT NUMBER	DHS-00-00-0-00000, CLIN XX
CONTRACTOR PART NO	ABC 2345
BOX X OF Y	BOX X OF Y
SHIPPING WEIGHT	XX LBS GROSS WT
CONDITION CODE	CONDITION “A”
QUANTITY & UNIT OF ISSUE	1 EACH
ELC MATERIAL	U.S. COAST GUARD ELC MATERIAL

3.3.4.3. Bar Code Labeling: All parts packages shall also have a bar code label applied, or incorporated into the packaging label. Bar Code labels shall be in accordance with ELC specification D-000-0100. The actual labels shall be Type V, Grade B, Style 2, Composition “B” with or without plastic laminate. Each label shall contain encoded data for the stock number, contract number, and the Delivery Order Number, as applicable.

4. QUALITY ASSURANCE (QA)

4.1. Shipping containers may be opened by Coast Guard Quality Assurance inspectors to validate the correct items are in the container, the container is packed appropriately, and the condition of the part.

5. N/A

6. NOTES:

6.1. ACQUISITION DOCUMENT REQUIREMENTS: Each procurement using this specification shall provide additional tailoring requirements as appropriate. Requirements shall include, but not be limited to, special preservation requirements, special packaging requirements, special markings, special container colors, etc.

6.2. DOCUMENT SOURCES:

6.2.1. Coast Guard Documents:

Commanding Officer
U.S. Coast Guard Engineering Logistics Center
Auxiliary Systems Acquisition Branch, M/S 26
2401 Hawkins Point Rd.
Baltimore, Maryland 21226

Attention: Sharon Jackson

6.2.2. Other Government Documents

General Printing Office
www.gpo.gov

6.2.3. American Society for Testing and Materials (ASTM)

100 Barr Harbor Drive,
PO Box C700
West Conshohocken, PA 19428-3959
http://www.astm.org

REVISION No.__-

ATTACHMENT J.2

DRAWINGS FOR USCG ELC
AUXILIARY MACHINERY BRANCH

D-085-0482

ORIGINATED BY Steve Sharpe. DATE _____.

ORIGINATOR'S COMMAND Engineering Logistics Center (ELC).

DEPARTMENT Auxiliary Machinery Branch (025).

INTERNAL REVIEWER _____.DATE _____.

SOWRB APPROVAL _____. DATE _____.

DRAWINGS FOR USCG ELC AUXILIARY MACHINERY BRANCH

1.0 SCOPE

1.1. This specification outlines the format, layout, & content requirements for technical drawings for all Engineering Logistics Center Auxiliary Machinery Branch procured equipment.

2.0 APPLICABLE DOCUMENTS

2.1. Document Availability – To obtain the referenced documents see section 6.1

2.2. Government Documents – The following specification and standards form a part of this specification to the extent specified herein. Unless otherwise specified, the documents listed here by number and date shall be those in the current Department of Defense Index of Specifications and Standards (DODISS) and supplements therein.

2.2.1. COMDINST M9085.1B. Naval Engineering Computer Aided Design Standards

2.3. Specification Order of Precedence – On the event of a conflict between the text of this specification and the references cited herein, this specification shall take precedence.

3.0 REQUIREMENTS

3.1. General.

3.1.1. The contractor shall provide drawings of the equipment provided under the contract. These drawings may be either new drawings or modifications of existing drawings or a combination of the two. The contract shall specify drawings to be modified or the contractor may contact the Contracting Officer for determination as to whether modification of an existing Coast Guard Drawing is acceptable to meet this requirement.

3.1.2. All drawings provided by the Contractor shall be drawn in accordance with COMDINST M9085.1B. Drawings shall be developed and delivered in AutoCAD^{tm} version 2002 (.dwg format). Templates may be provided by the Contracting Officer upon request. Specific attention should be paid to preparation of the physical components of the drawings in model space and inserting the border and standard blocks in paper space. Non-compliance of these items including format and construction of the drawings shall be justification for resubmittal.

3.1.3. All drawings shall be submitted initially per the contract schedules for review and comment by the Government and shall be resubmitted upon receipt of comments from the government.

3.1.4. Individual views or elements of the drawings may be incorporated into a Technical Publication as a figure but the complete drawing should not be included. Complete drawings may be included by reference in the Technical Publication to NE-TIMs by the drawing number as assigned by the Coast Guard.

3.1.5. Elements of the drawings may also be included in the Design and Interface Report as necessary to meet those requirements. Drawings for this purpose maybe identified as drafts if further development of the system is anticipated prior to delivery of first articles per the contract in order to prevent delay in the submittal of that report.

3.1.6. During the life of the contract the contractor shall update and submit drawings to the Contracting Officer after adding/replacing new hardware or configuration whether the change is the result of the manufacturer's production changes or is as a result of amendments to the contract initiated by the Coast Guard.

3.1.7. If the class of cutters has individual sub-classes (i.e. 270-A and 270-B) the contractor shall provide alternate drawings for each subclass if the original installations varied or if the new system installations must vary between the subclasses. This may vary either by variations in ripout drawings or the installations themselves. The Contracting Officer shall make this distinction if the contractor is unsure of applicability to their contract. Any drawing applicable to individual cutters or sub-classes must have applicability of the drawing identified.

3.1.8. The Coast Guard reserves the right to reproduce all drawings and content for distribution within the Coast Guard and for future commercial repairs and overhaul.

3.2. New Drawings –

3.2.1. For all procurements of new equipment that change the configuration of a cutter (vice replacement in kind with new equipment of same design/manufacture) the Contractor shall provide drawings of the equipment. Drawing numbers for new drawings shall be provided by the Coast Guard as part of the reply to the initial submittal.

3.2.2. The Contractor shall provide at least the following drawings:

3.2.2.1. Equipment Arrangement drawings, which shall completely identify the physical characteristics, weight and centers of gravity for each module of the equipment or system.

3.2.2.2. Equipment Assembly drawings, which shall include bills of material.

3.2.2.3. Structural Interface drawings, which shall identify the mounting point dimensions and structural loads and moment reactions transferred to ship structure under design loading conditions for each module that is to be installed. If the contractor is to install the equipment, if there are special requirements for the foundations (such as freedom of movement or shock/vibration mounts), or if the contract specifically calls for it, include foundation drawings to be installed in the vessel.

3.2.2.4. Hydraulic System drawings, if applicable, which shall include:

3.2.2.4.1. A Hydraulic Diagram that identifies all major hydraulic

components, identifies the required contamination cleanliness limit, and complies with SAE J1780.

3.2.2.4.2. A Hydraulic Interface drawing that identifies the piping and components to be installed by the Installing Activity

3.2.2.5. Electrical System drawings, if applicable, which shall include:

3.2.2.5.1. Electrical Diagrams of the equipment

3.2.2.5.2. Ladder Logic of control systems.

3.2.2.5.3. Electrical Interface drawings that identifies the electrical wiring and components to be installed by the Installing Activity.

3.2.2.5.4. Block Wiring Diagrams that identify major assemblies and inter-connecting cables. Cables shall be identified by type, length, size and number of connectors.

3.2.2.5.5. Other specific drawings as identified in the contract specification calling out this specification.

3.2.3. Installation Drawings - If the contract includes requirements for the contractor to install the equipment on the Cutter the Contractor shall provide the following:

3.2.3.1. Ripout drawings showing modification of existing Coast Guard drawings indicating all elements of the initial installation that are to be removed. The contractor may need to add new views of the originally installed equipment to clarify distinction between removed and retained equipment. The existing drawings shall be indicated and provided to the contractor.

3.2.3.2. Installation drawings showing necessary modifications to equipment and systems not included in the basic system provided including:

3.2.3.2.1. Electrical cabling to existing panels or boards

3.2.3.2.2. Modifications to external piping systems either to connect to the new system or to provide clearance to install the new system.

3.2.3.2.3. Structural modifications beyond the required equipment foundations to either support the new system or provide clearance or access to the new system.

3.2.3.2.4. Other specific drawings as identified in the contract.

3.3. Submission Requirements

3.3.1. Drawings shall be provided for initial review in accordance with the CLIN schedule included in the contract. The Contractor shall provide 1 hard copy and an electronic digital copy of the proposed drawings to the Contracting Officer for review and approval by the Government. One copy will be returned with comments along with the assignment of a Coast Guard Drawing number, for incorporation into the title block.

3.3.2. The Contractor shall provide one final approved copy of the drawing revisions in electronic digital format to the Contracting Officer

3.3.3. In addition, the Contractor shall, over the life of the initial contract to procure the equipment, provide updates to the drawings whenever there is a change/update to the equipment, whether initiated by the contractor or as an amendment issued by the Coast Guard. Deliverable requirements are the same as for initial drawings

above. Distribution of drawing updates will be the responsibility of the government. Only drawings affected by changes shall be submitted. At the completion of the contract, the contractor shall provide a final update of the drawing's electronic digital files to record final configurations of equipment.

4.0 QUALITY ASSURANCE

4.1. Responsibility For Accuracy - The contractor is responsible to verify the accuracy of all contents of the drawings as submitted.

4.2. Responsibility For Compliance - All items shall meet the provisions of Sections 3 & 5. Any discrepancy missed in the review of the material by the government does not relieve the contractor of the responsibility to correct it.

5.0 PRESERVATION, PACKING, & MARKING

5.1. All drawings shall be packaged in proper containers prior to shipment to prevent damage in shipping. The drawings shall be submitted to the Contracting Officer and identified by contract number and equipment title.

6.0 NOTES

6.1. Acquisition Document Requirements –

6.1.1. Each procurement using this specification shall specify the unique needs for the drawings for the subject equipment. In the event that the contractor is to modify existing drawings the contract shall specify those drawings and provide the drawings to the contractor in an open .dwg format.

6.2. Government & Commercial Document Sources

6.2.1. COMDINST M9085.1B. Naval Engineering Computer Aided Design Standards can be provided by the Contracting Officer

Commanding Officer
USCG Engineering Logistics Center
Auxiliary Systems Acquisition Branch
2401 Hawkins Point Road, M/S 26
Baltimore, MD.. 21226-5000
ATTN: Sharon Jackson
(410-762-6463.)

REVISION No. - .

ATTACHMENT J.2

TECHNICAL PUBLICATIONS FOR USCG ELC AUXILIARY MACHINERY BRANCH

D-086-0483

ORIGINATED BY Steve. Sharpe. DATE 04/14/06 .

ORIGINATOR'S COMMAND Engineering Logistics Center (ELC) .

DEPARTMENT Auxiliary Machinery Branch (025) .

INTERNAL REVIEWER Clyde Martin DATE .

SOWRB APPROVAL . DATE .

TECHNICAL PUBLICATIONS FOR USCG ELC AUXILIARY MACHINERY BRANCH

1.0 SCOPE

1.1. This specification outlines the format, layout, & content requirements for all Engineering Logistics Center Auxiliary Machinery Branch procured material Technical Publications (TP).

2.0 APPLICABLE DOCUMENTS

2.1. Document Availability – To obtain the referenced documents see section 6.1

2.2. Government Documents – The following specification and standards form a part of this specification to the extent specified herein. Unless otherwise specified, the documents listed here by number and date shall be those in the current Department of Defense Index of Specifications and Standards (DODISS) and supplements therein.

2.2.1. MIL-DTL-24784/4B Associated Detail Specification – Commercial Off the Shelf (COTS) Equipment Manual Requirements

2.3. Specification Order of Precedence – In the event of a conflict between the text of this specification and the references cited herein, this specification shall take precedence.

3.0 REQUIREMENTS

3.1. General – The Contractor shall provide a Technical Publication for the installation, operation and maintenance of the equipment specified by the contract.

3.1.1. MIL-DTL-24784/4B is generally considered in excess of the needs of the Coast Guard and compliance with it is not required. However, if the contractor has a Technical Publication previously developed that is in accordance with MIL-DTL-24784/4B it may be initially submitted for review and acceptance, but the Coast Guard retains the ability to request changes in accordance with the following criteria. If not already in page size 8 ½ by 11 it shall be resized prior to submission.

3.1.2. The Technical Publication shall provide, as a minimum, the necessary information to install the equipment, and instructions to operate and maintain the equipment at the organizational level. The manual shall contain information concerning checkout, inspection, preventive and corrective maintenance, calibration, adjustment, troubleshooting, replacement of parts, repair, and use of tools and test equipment in accordance with the maintenance concept. The following subject areas shall be included:

3.1.2.1 General Information - Identify and describe the purpose, interconnection, and functional use of the equipment.

3.1.2.2 Safety Precautions - Identify and describe safety issues inherent in the operation and maintenance of the equipment.

3.1.2.3 Theory of Operation – Identify and describe the theory of operation of the equipment and all components.

3.1.2.4 System Description – Identify and describe the purpose and functional operation of the equipment and components.

3.1.2.5 Component Description - Include information to identify and describe all major system components.

3.1.2.6 Functional Description - Discuss the control philosophy used in the system design and provide a detailed description of the controls used.

3.1.2.7 Installation – Include drawings and information sufficient to install the equipment, including handling procedures, special tools, access clearances and supporting services (crane, welding, etc.) required. Identify any initial adjustments and set-up procedures. The locations of lifting eyes and special rigging shall be identified

3.1.2.8 Operating Procedures - Identify all start up and normal system operations and evolutions. Detailed step-by-step operating procedures for these start, stop, and normal operations and evolutions shall be provided with accompanying illustrations where necessary.

3.1.2.9 Maintenance Procedures - Identify all preventive maintenance and corrective maintenance operations and evolutions. Detailed step-by-step procedures shall be provided. Equipment lubrication charts and diagrams shall be provided. The charts and diagrams shall be suitable for reproduction on plate for posting in the vicinity of the equipment. The charts and diagrams shall graphically depict the equipment and points to be lubricated; points which may be hidden from normal view or difficult to locate on the equipment shall be so noted. Charts shall be in tabular form, identify the number and type of points to be lubricated, the lubricants required, the frequency of lubrication application and the quantity of lubricant required for each application. Volume shall be in definable units; “pumps of a grease gun” or the equivalent are not acceptable. A description of the lubricant performance or selection requirements shall be included.

3.1.2.10 Emergency Procedures - Identify conditions requiring emergency operations and provide procedures to be followed in the event of their occurrence. Emergency operation is defined as operation under conditions of system malfunction or failure such as loss of power, component failure, physical damage, or fire. Detailed step-by-step procedures for dealing with emergencies shall be provided.

3.1.2.11 Troubleshooting Procedures – Provide detailed instructions for locating an equipment malfunction including troubleshooting procedures; troubleshooting diagrams; maintenance schematics and logic diagrams.

3.1.2.12 Equipment/System Limitations, Precautions, Set Points - Identify all system operational limitations. State all precautions to be taken during normal operation to preclude potentially unsafe conditions. List system operation set points, which represent the normal operation of the system.

3.1.2.13 Illustrated Parts Lists - Identify parts associated with the equipment. An exploded illustration shall show the location of the parts. The parts list shall identify the piece parts of the illustration, quantity installed, nomenclature, designation, original manufacturer and original manufacturer's part number. Part numbers are not required for common hardware available from multiple sources, if adequate descriptive data is provided. Parts data listed in the technical manual shall be the same as listed on the Data For Provisioning.

3.1.2.14 Spare Parts – The spare parts lists and recommendations developed for the Integrated Logistics Support (ILS) shall be included in the publication.

3.1.2.15 Appendices – Provide tabular appendices (as necessary) for technical data and literature, repair and overhaul information on major subassemblies and supportable components such as motors, motor controllers, gearboxes, winches, heat exchangers, etc. Where motors, pumps, or other included equipment are provided by a separate source (subcontractor) and have their own independent technical documentation, the above content may be provided in a Appendix for that equipment. Any content on interface of that equipment with the larger system should be included in the main document.

3.1.3. The Technical Manual shall be organized in the following manner

3.1.3.1 Individual Manual Application Sheet (IMAS) with TP number, Ships Work Breakdown Structure (SWBS) number, SWBS element title, equipment functional description and a section applicability listing identifying the applicable cutters. No numbering of this page or referencing of the Change Number shall be done.

3.1.3.2 Cover Page with TP number and section letter, title of equipment, manufacturer, model number and date of issue. No numbering of this page or referencing of the Change Number shall be done.

3.1.3.3 List of Effective Pages (LOEP) that identifies the change number and its date and a listing of all pages and their change number. Numbering the pages and referencing the Change Number is required. Pages shall be numbered starting with LOEP-1.

3.1.3.4 Change Record (CR) page(s) that provide(s) a list of all changes, their date, and a brief description of the changes. Numbering the pages and referencing the Change Number is required. Pages shall be numbered starting with CR-1.

3.1.3.5 Table of Contents (TOC) page(s) that provides chapter titles and the page where started within the manual. Additional TOC pages shall be included to

identify any List of Illustrations, List of Tables, List of Drawings, and so forth within the manual. Numbering the pages and referencing the Change Number is required. Pages shall be numbered starting with TOC-1.

3.1.3.6 Miscellaneous front matter pages, such as safety summary and general information shall be provided where necessary. Numbering the pages and referencing the Change Number is required. Pages shall be numbered starting with “i".

3.1.3.7 Main text pages shall be organized to follow the order presented by the table of contents. Numbering the pages and referencing the Change Number is required. Pages shall be numbered in accordance with 3.1.4.3 below.

3.1.3.8 Complete functional block diagrams and schematic diagrams shall be provided for electrical and electronic circuits. Controller schematics shall be provided in the technical publication for the entire electrical system including ladder diagrams.

3.1.3.9 Appendices as discussed above shall be in the back of the publication and identified in the Table of Contents by upper case letters and equipment manufacturer and description (i.e. Appendix A - Acme Circ Pump).

3.1.4. The Technical Manual shall be submitted in the following format:

3.1.4.1 Text - Text shall be single-column and single-spaced, with one-inch left-hand margins and unjustified right-hand margins. Text size shall be 12 point in a standard, easily readable font. Titles and headers shall follow a heading style hierocracy. Footnotes, notes and other side information shall be 8 point or larger.

3.1.4.2 Paper Size – Page size shall be 8-1/2 inches by 11 inches. Text shall be printed on both sides of the paper, head to head. Pages shall be three-hole punched with 3/8 inch diameter holes.

3.1.4.3 Page Numbers – Pages shall be numbered sequentially within a publication. Page numbers shall be shown at the bottom center. The bottom right corner shall be reserved for a change identifier. For fold-in pages, the page number shall be shown near the bottom right hand corner, together with the change identifier.

3.1.4.4 Dividers - Major chapters, sections, and appendices shall be clearly identified with tab dividers.

3.1.4.5 Drawings - The maximum drawing size within the technical publication shall be ANSI size B, 11”h x 17”w, which shall be accordion folded. Prints of larger drawing sizes shall be reduced, as necessary, to fit the 17-inch wide fold-in, and shall remain legible or be divided into individual sheets. Regular Coast Guard drawings are not to be included in Technical Drawings but are to be referenced therein.

3.1.4.6 Illustrations – Include illustrations (line drawings, photographs or halftones) for locating and identifying all components significant to operation and maintenance and to show configuration and parts relationship for removal

and disassembly procedures. Free hand sketches are not permitted. Photographs shall be detailed and sharp, free of heavy shadows, distorted objects, cluttered foregrounds or backgrounds, and give good contrast from white, middle tones and black.

3.1.4.7 Diagrams shall include, as applicable:

3.1.4.7.1 Simplified functional block
3.1.4.7.2 Locator
3.1.4.7.3 Piping
3.1.4.7.4 Plumbing
3.1.4.7.5 Hydraulic
3.1.4.7.6 Schematic
3.1.4.7.7 Electrical
3.1.4.7.8 Digital
3.1.4.7.9 Other, as necessary.

3.1.4.8 Symbols – Symbols used on illustrations and diagrams shall be standard or common to the trade or commodity. Where nonstandard symbols are used, a key to the symbols shall be provided.

3.1.4.9 Electronic Format - Technical Publications packages shall be developed in electronic format, using Microsoft Office[tm] compatible electronic file format, with imbedded text and graphic files. Drawings included in the content shall be developed and delivered in AutoCAD[tm] version 2002 (.dwg format). All other preprinted publications and documents not developed and delivered in Microsoft Office[tm], shall be scanned in and delivered as an unlocked Portable Document Format (.pdf) file. The final deliverable publication may be a compilation of the above formats. The electronic publication shall have Bookmarks to the Table of Contents, List of Tables, List of Illustrations, Chapters and Appendices, to permit ease of navigation by the end users. All Electronic reproducible files (pdf, Office, AutoCAD[tm], and so forth) shall be delivered in CD format with electronic file names and revisions clearly identified.

3.1.5. Submission Requirements

3.1.5.1 The Contractor shall provide 3 copies of the proposed manual to the Contracting Officer for review and approval by the Government. One copy will be returned with comments along with the assignment of a Coast Guard Technical Publication number, for incorporation into the title page and cover.

3.1.5.2 The Contractor shall provide one final approved copy of the manual revisions in electronic unlocked .pdf format to the Contracting Officer

3.1.5.3 Distribution of manual updates will be the responsibility of the government.

3.1.6. The Coast Guard reserves the right to reproduce all Technical Manuals and content for distribution within the Coast Guard and for future commercial repairs

and overhaul.

4.0 QUALITY ASSURANCE

4.1. Responsibility For Accuracy - The contractor is responsible to verify the accuracy of all contents of the technical publication.

4.2. Responsibility For Compliance - All items shall meet the provisions of Sections 3 & 5. Any discrepancy missed in the review of the material by the government does not relieve the contractor of the responsibility to correct.

5.0 PRESERVATION, PACKING, & MARKINGS

5.1. Preservation & Packing – Publication shall be packaged in proper containers prior to shipment to prevent damage in shipping. .

5.2. Marking – The documents shall be submitted to the Contracting Officer and identified by contract number and equipment title.

6.0 NOTES

6.1. Acquisition Requirements - Each procurement using this specification shall specify any specifid needs for the technical publication for the subject equipment.

6.2. Government & Commercial Document Sources

6.2.1. Government Documents

6.2.1.1 Specifications and Standards (DODISS Documents)
Standardization's Document Order Desk
700 Robbins Avenue
Building #4, Section D
Philadelphia, PA 19111-5094
215-697-1187

6.2.1.2 DOD & Navy Publications and Forms (Other Than DODISS)
Naval Publication and Forms Center
5801 Tabor Ave.
Philadelphia PA 19120
215-697-2000

6.2.1.3 Commanding Officer
USCG Engineering Logistics Center
Auxiliary Systems Acquisition Branch
2401 Hawkins Point Road M/S 26
Baltimore, MD.. 21226-5000

ATTN: Sharon Jackson
(410-762-6463)

REVISION No. - .

ATTACHMENT J.2

PREPARATION OF MAINTENANCE PROCEDURE CARDS FOR USCG ELC AUXILIARY MACHINERY BRANCH

D-086-0484

ORIGINATED BY Steve Sharpe DATE 04/14/06 .

ORIGINATOR'S COMMAND Engineering Logistics Center (ELC) .

DEPARTMENT Auxiliary Machinery Branch (025) .

INTERNAL REVIEWER Clyde Martin . DATE _____ .

SOWRB APPROVAL _____ . DATE _____ .

MAINTENANCE PROCEDURE CARDS FOR USCG ELC AUXILIARY MACHINERY BRANCH

1.0 SCOPE

1.1. This specification outlines the format, layout, & content requirements for development of Maintenance Procedure Cards for all Engineering Logistics Center Auxiliary Machinery Branch procured material.

1.2. Classification

1.2.1. Non-classified

2.0 APPLICABLE DOCUMENTS

2.1. Document Availability – None

2.2. Government Documents –

a. NAVSEA 0900-LP-03909010, Ships Work Breakdown Structure (SWBS)

2.3. Commercial Documents – None

2.4. Specification Order of Precedence – On the event of a conflict between the text of this specification and the references cited herein, this specification shall take precedence.

3.0 REQUIREMENTS

3.1. Maintenance Recommendations - The Contractor shall provide maintenance recommendations for the equipment, including all maintenance activities that are required to keep the system operating properly. Recommendations shall include hourly, daily, weekly, monthly, quarterly, semi-annual, annual and condition based checks, inspections, adjustments and parts replacements. Recommendations shall be in parallel to maintenance recommendations in the Technical Publication.

3.2. Maintenance Procedure Cards - Each maintenance procedure shall be inserted into a Coast Guard Maintenance Procedure Card (MPC) form using the attached (GFI) MPC MICROSOFT OFFICE(tm) WORD blank form / template, see Appendix 1.

3.3. Information Entries- The Contractor shall enter information, to the degree each is known, into the following sections of the MPC form for each maintenance activity.

3.3.1. Block 1: Include the following content adjacent to the listed titles.

a. Work Center: Leave blank, Coast Guard to identify.

b. Class: Cutter Class, usually identified by the length of the cutter in feet.

c. Frequency: Procedure description and frequency. Frequency is indicated by "H" for hourly, "D" for daily, "W" for weekly, "M" for monthly, "Q" for quarterly, "S" for semi-annual, "A" for annual and "C" for condition based

check. The specific conditions for frequency "C" shall be explained in Periodicity Event below

- **d.** Periodicity Event: How often, or the condition under which an MPC is to be performed. Used primarily for items whose Frequency is "C".
- **e.** System: Leave blank, Coast Guard to identify
- **f.** Subsystem: Use title of equipment as per technical manual title.
- **g.** Component: Identify the specific noun name to which the card applies, i.e. circ pump, motor, etc.
- **h.** Personnel: Provide general description of the number and level of personnel to perform the item. Coast Guard will modify to identify the shipboard personnel ratings.
- **i.** ESWBS: The broad classification of the MPC subject as defined by the Ships Work Breakdown Structure (SWBS) (NAVSEA 0900-LP-03909010).
- **j.** Task Hrs/Component: Estimated hours per component to complete the described maintenance from initial assignment through clean-up and stowage of parts and tools. Do not simply use commercial labor hour criteria.
- **k.** Number of Components: Number of units that must be maintained, Task hours above are per piece.
- **l.** APL: Leave blank unless provided by Coast Guard.
- **m.** Procedure Description: General statement of maintenance action, i.e. Change Lubricant, Clean and Inspect, etc.

3.3.2. Block 2: Safety Precautions; Special safety precautions applicable to the maintenance procedure being performed. Routine procedures or general phrases need not be repeated

3.3.3. Block 3: References; List any applicable technical manuals that would assist in completion of the item

3.3.4. Block 4: Tools; Identify the specific tools the person will need to perform the task in order to prevent multiple trips back to the tool cabinet to accomplish the task. Specific sizes or equipment should be identified, NSNs or part numbers are preferred

3.3.5. Block 5: Consumables (by item name); This is to include items like rags, wire, miscellaneous hardware that need to be provided to complete the work. Part numbers or NSNs are preferred

3.3.6. Block 6: Parts required to perform the item such as gaskets, or wear parts, including those for "replace as needed" should be listed. Include quantity, item name, and part number identified in Technical Manual and parts lists.

3.3.7. Block 7: HAZMAT Any item or material involved in the completion of the MPC, which qualifies as hazardous material and poses a threat to personnel and/or requires special handling or disposal procedures.

3.3.8. Block 8: Related Maintenance Other Maintenance procedures that may be

performed concurrently or may need to be accomplished depending upon the results of the inspections performed. This information can greatly assist in maintenance scheduling.

3.3.9. Block 9 Location Physical location of the component being maintained, if known.

3.3.10. Block 10: Procedures Define the scope of the maintenance procedure in step by step order so that Coast Guard fleet personnel or contractors of the levels indicated above should be able to do the complete task from the description alone without additional guidance. Identify parts by the same nomenclature as the technical manual.

3.4. Maintenance Procedure Card Amendment(s)

3.4.1. In the event that equipment provided by the contractor only provides a partial change to the configuration of a cutter the contractor may provide a Maintenance Procedure Card Amendment in lieu of a new Maintenance Procedure Card. Determination of this shall be made by the Contracting Officer and the existing Maintenance Procedure Card shall be indicated and provided to the contractor.

3.4.2. The Contractor shall review the Maintenance Procedure Card(s) provided. The Contractor shall provide individual amendments for each of the Maintenance Procedure Card(s) identified as affected by the equipment provided. All amendments shall be in accordance with the requirements in 3.3 above. The contractor amendments shall, to the extent practical include:

- **a.** Delete references to equipment and systems removed.
- **b.** Provide changes to the parts and part numbers, tools, maintenance procedures, and any other element affected by the changes to the system.
- **c.** Verify and modify if necessary the frequency of the maintenance or the event which would trigger the maintenance requirement.
- **d.** Develop new Maintenance Procedure Card(s) when necessary to address new maintenance requirements.
- **e.** Revise any changes in reference to a Technical Publication which is also being modified as a result of the contract.

3.4.3. If the provided MPCs are in hard copy the contractor may either provide a mark-up of the card or enter the information in the following template. If provided with a digital Word Document, the amendment for each MPC shall be provided in digital Word Document with Track Changes feature in effect for all changes.

4.0 QUALITY ASSURANCE (QA)

4.1. Responsibility For Accuracy - The contractor is responsible to verify the accuracy of all contents of the new MPCs and modifications to existing MPCs as submitted.

4.2. Responsibility For Compliance - All items shall meet the provisions of Sections 3 & 5. Any discrepancy initially missed in the review of the material by the government does

not relieve the contractor of the responsibility to correct it during the term of the contract. .

5.0 PRESERVATION, PACKING, & MARKING

5.1. Preservation & Packing – The documents shall be submitted to the Contracting Officer and identified by contract number and equipment title. The documents shall be submitted in Microsoft Office(tm) format as electronic files. One electronic copy shall be submitted on CD-ROM for review and approval. One electronic copy of each approved document shall be submitted on CD-ROM.

6.0 NOTES

6.1. Government & Commercial Document Sources

6.1.1. Government Documents

a. Specification and Standards (DODISS Documents)
Standardizations Document Order Desk
700 Robbins Avenue
Building #4, Section D
Philadelphia, PA. 19111-5094
215-697-1187

b. DOD & Navy Publications and Forms (Other Than DODISS)
Naval Publication and Forms Center
5801 Tabor Ave.
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Maintenance Procedure Card

DEPARTMENT OF HOMELAND SECURITY U.S. COAST GUARD	**MAINTENANCE PROCEDURE CARD (MPC)**	DATE		MPC SERIAL NUMBER

[1]

Work Center:	**Class:**	**Frequency:**
System:	**Subsystem:**	**Periodicity Event:**
Component:	**ESWBS:**	**Number of Components:**
Personnel:	**Task Hrs/Component:**	**APL:**

Procedure Description:

[2] - SAFETY PRECAUTIONS

[3] - REFERENCES

[4] – TOOLS

[5] - CONSUMABLES

[6] – PARTS

[7] - HAZMAT

[8] - RELATED MAINTENANCE

[9] - LOCATION

[10] - PROCEDURE

REVISION ___-____

SPECIFICATION OR
STATEMENT OF WORK
COVER SHEET

ATTACHMENT J.2

DATA FOR PROVISIONING

SPECIFICATION NUMBER

D-083-0351

ORIGINATED BY: Walt Buschmann DATE: 01/03/00

ORIGINATOR'S COMMAND: ENGINEERING LOGISTICS CENTER (ELC)

DEPARTMENT/DIVISION:

INTERNAL REVIEWER: _____DATE:

SOWRB APPROVAL: Walt Buschmann_____DATE: 01/03/00____

DATA FOR PROVISIONING D083-0351

1 SCOPE

1.1 This specification covers the requirements for provisioning parts and material. The Coast Guard has incorporated a method to overcome data requirement issues and ensure a satisfactory level of documentation and support for the Contractor's equipment. A method of Government Accelerated Provisioning (GAP) has been chosen as the vehicle to acquire necessary information and present the least impact to the Contractor. This specification establishes the requirement for the Contractor to provide raw supply support data and material to the Government for the use of a Coast Guard Provisioning Team. This data and material, or data for provisioning, will consist of drawings, commercial manuals, catalogs and product information sheets. The Contractor's DFP is often considered the most vital element of logistics support. Without this detailed information, the Federal Supply System would be unable to develop the technical coding needed to identify and procure the Contractor's equipment during the life cycle of the Contractor's equipment.

2. REFERENCES (None)

3. REQUIREMENTS FOR DATA PROVISIONING (DFP)

3.1 General. The GAP method of provisioning described below provides an expedient alternative approach to the standard provisioning process.

3.1.1 The GAP methods offers many advantages to the Coast Guard which significantly reduce the processing time, reduce the need for Interim Supply Support, and ultimately reduce outfitting and supply support costs.

3.1.2 Significant savings can be realized by the Coast Guard by not requiring the Contractor to develop Provisioning Technical Documentation, (PTD) in accordance with the military standards and specifications. The standard, formatted PTD, which includes Provisioning Parts Lists (PPL), Tool and Test Equipment Lists (TTEL), Long Lead Time Items Lists (LLIL), etc., shall not be required of the contractor through this specification.

3.2 Data for Provisioning (DFP)

3.2.1 General. The Contractor shall only be required to provide certain DFP that includes drawings, commercial technical manuals, catalog data and product specification sheets, which form the minimum data to provision a system or piece of equipment. Examples of the DFP include, but are not limited to: certification data, name plate data, component characteristics data, commercial specification sheets, end item/component prices, manufacturer's identification (or Commercial and Government Entity Code (CAGE)), part number, shelf life, and special material / operating requirements. This data will then be used for the Coast Guard's identification, cataloging, selection and determination of initial requirements for support items to be procured through the provisioning process.

3.2.2 As a minimum, the Contractor's DFP shall be detailed enough to include:

a. A listing that identifies all the piece parts which can be assembled, re-assembled, and/or replaced.

b. General arrangement, diagrammatic drawing and/or detailed Technical Publication that describes the end item, end item's equipment and/or piece parts; material, mechanical electrical, dimensional characteristics, location, and their function within the assembly.

c. All special tools and test equipment required to maintain the end item.

d. A listing of spare parts recommended by the Contractor to support the end item for a period of one (1) year. The listing must contain end item/component prices.

3.2.3 DFP is required for each piece of equipment being procured by the Government through this specification.

3.2.4 The Contractor shall notify the Coast Guard within five (5) working days of any changes effecting equipment/piece parts configurations during the performance of the contract.

3.3 Contractor to Vendor/Subcontractor DFP Obligations. The Contractor shall put provisions in his lower-tier subcontractors and supply agreements requiring compliance with this specification. The DFP that the Coast Guard requires from the Contractor's vendors/subcontractors shall be provided by the Contractor.

3.4 Procurement Obligations. Support items that the Coast Guard identifies through the provisioning process shall not be considered by the Contractor, vendor, or subcontractor as a commitment or obligation on the part of the Coast Guard to procure such items.

3.5 Provisioning Quality Control. The Contractor shall be responsible for the completeness and accuracy of all DFP provided. The Government reserves the right to implement provisioning quality control which may include, but not be limited to:

a. Selective review of Contractor purchase orders and vendor quotations to assure compliance with provisioning procedures and to ensure that these DFP requirements are complied with as a single line item (priced out or no charge) contract deliverable in this contract document.

b. Physical validation of installed components and equipments name, plate characteristics, data against Contractor purchase orders, DFP, APLs, construction or equipment drawings, labels and markings of equipments of components validated.

3.6 Provisioning Conference(s). Provisioning Conferences shall be called at the Contracting Officer's discretion. These conferences will only be called after normal attempts to resolve DFP discrepancies have been exhausted. The Contractor and his/her vendors as required shall participate in these conferences. The Contractor shall make complete technical data and the specific equipment being provisioned available for inspection.

3.6.1 During those Provisioning Conferences held at the Contractor's facilities, the Contractor shall make all DFP available to a Government On-Site Provisioning Team in a centralized location.

3.6.1.1 The centralized location shall accommodate up to six (6) Government On-Site Provisioning Team members during normal business hours for a period of five (5) working days.

4. DELIVERY

4.1 Delivery of all required information shall be within forty-five (45) days or concurrent with delivery of end item which ever is earlier. The Coast Guard requires ninety (90) days to review. The Contracting Officer will provide written approval or recommendations for improvement. The Contractor shall have forty-five (45) days to correct and resubmit if the initial delivery is disapproved.

NOTE: PROVIDE PART AND PRICE LIST YOU RECOMMEND TO SUPPORT END ITEM FOR ONE (1) YEAR.

Delivery of the parts and price list shall be within thirty (30) days after contract award.

APPENDIX C—MINIMUM PURCHASER-DEFINED REQUIREMENTS
ATTACHMENT J.4

Installation Description:

Type of Installation: Boat Davit on Stern of 270 LOA Coast Guard Cutter

Installation Main Deck Elevation above Sea Level: Approximately 10 ft.

Crane Boom Heel Pin Elevation above Main Deck: tbd ft.

Minimum Design Service Temperature: +10 °F

Maximum Design Service Temperature: +95+solar gain (+140) °F

Features:

Boom Length: min. reach no less than 15, max. 17-21 ft (to be determined by mfgr based upon crane configuration meeting lifting requirements.)

Prime Mover: integral HPU, electrically powered.

Area Classification: (See Section 10.4)

At Crane:	Class	n/a	Division		Group(s)
Boom:	Class	n/a	Division		Group(s)
Power Unit:	Class	n/a	Division		Group(s)

Out-of-Service Maximum Conditions:

Boom Not Stowed	**Boom Stowed**
Max Wind (24.5kts) 28.2 mph	Max Wind (59.5kts) 68.5 mph
For Floating Crane Vessel Platforms:	
Max Significant Sea (H_{sig}) 10.7 ft.	Max Significant Sea (Hsig) 37.7 ft.
Max Crane Accelerations:	Max Crane Accelerations:
_____ Per Tables 3-5 for specified H_{sig}	_____ Per Tables 3-5 for specified H_{sig}
_____g's horiz and _____ g's vert	Ax-1.79g's, Ay 1.42g's horiz and Az-2.873 g's vert

Performance Requirements:

Ratings to be determined by which method (check one):

☑ Vessel Specific Method (Floating Crane Vessels only)

☐ General Method (Floating or Fixed Crane Installations)

☐ Default Dynamic Method (Fixed Platforms only—calm seas, tethered supply boat)

Minimum Purchaser Defined Criteria for Fixed or Floating Installations

Purchaser Defined Lift Criteria	Onboard Lifts (Calm Seas)	Onboard Lifts 2nd Criteria	Offboard Lifts 1st Criteria	Offboard Lifts 2nd Criteria
Main Block Required SWL - lb	4600		5000	
Main Block SWL Radius - ft	17'* aft		11'* athwartships	
Auxiliary Required SWL – lb		900		
Auxiliary Hook SWL Radius - ft		21'		

* Values for individual crane designs may vary, i.e. depending upon required reach for suspended boat to clear crane elements and for crane to suspend boat athwartships under maximum list conditions.

Additional Criteria for Fixed/Bottom Supported or Floating/Vessel Installations

Purchaser Defined Lift Criteria	Onboard Lifts (Calm Seas)	Onboard Lifts 2nd Criteria	Offboard Lifts 1st Criteria	Offboard Lifts 2nd Criteria
Main Block Speed @ Supply Boat Deck – ft/sec	(minimum)		1 ft/sec (60 ft/min)	1 ft/sec (60 ft/min)
Aux Hook Speed @ Supply Boat Deck – ft/sec	(minimum)			
Significant Wave Height (H_{sig}) - ft	n/a		10.7	10.7
Wind Speed - mph			(24.5kts) 28.2	(24.5kts) 28.2

Additional Purchaser Defined Criteria – Floating/Vessel Installation Cranes Only (TLP/SPAR/Semisubmersible/Drillship/Etc.)

Purchaser Defined Lift Criteria	Onboard Lifts (Calm Seas)	Onboard Lifts 2nd Criteria	Offboard Lifts 1st Criteria	Offboard Lifts 2nd Criteria
Crane Base Static Inclination (Installation List Angle) - degrees			0	0
Crane Base Static Inclination (Installation Trim Angle) - degrees			0	0
Boom Tip Velocity – ft/sec.	n/a		6.17	6.17
Horizontal Acceleration – g's	n/a		Ax=.536g, Ay=.346g	Ax=.536g, Ay=.346g

1g=32.2 ft/sec^2

PAST PERFORMANCE QUESTIONNAIRE

ATTACHMENT J.5

1. To what extent did the contractor adhere to contract delivery schedules?

Considerably surpassed/exceeded delivery schedules [ ]

Met delivery schedule (no unexcusable delays) [ ]

Minimal delays (did not impact achievement of contract Requirements) [ ]

Extensive unexcused delays [ ]

COMMMENTS:_____

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2. To what extent was the contractor able to solve contract performance problems without extensive guidance from the government?

Completely successful [ ]

Generally successful [ ]

Little success [ ]

No success [ ]

3. To what extent did the contractor display initiative in meeting requirements?

Displayed considerable initiative [ ]

Displayed some initiative [ ]

Displayed little initiative [ ]

Displayed no initiative [ ]

4. Has the contract been partially or complete terminated for default?

[ ] YES

[ ] NO

If yes, briefly explain (i.e. inability to meet performance or delivery schedules).

_____

5. Provide an overall rating of the contractor's quality of the products supplied.

Excellent – conformed to contract/specification requirements [ ]

Satisfactory – slight nonconformances did not effect product [ ]

Unsatisfactory – nonconformances inhibited product usefulness [ ]

Poor – extensive nonformances [ ]

If the contractor experienced extensive nonconformances, please explain below the circumstances surrounding nonconformances (i.e. inability to meet specification requirements).

6. Would you contract with the contractor again and would you refer this contractor to other potential sources?

[ ] YES

[ ] NO

If NO, please explain:_____

_____